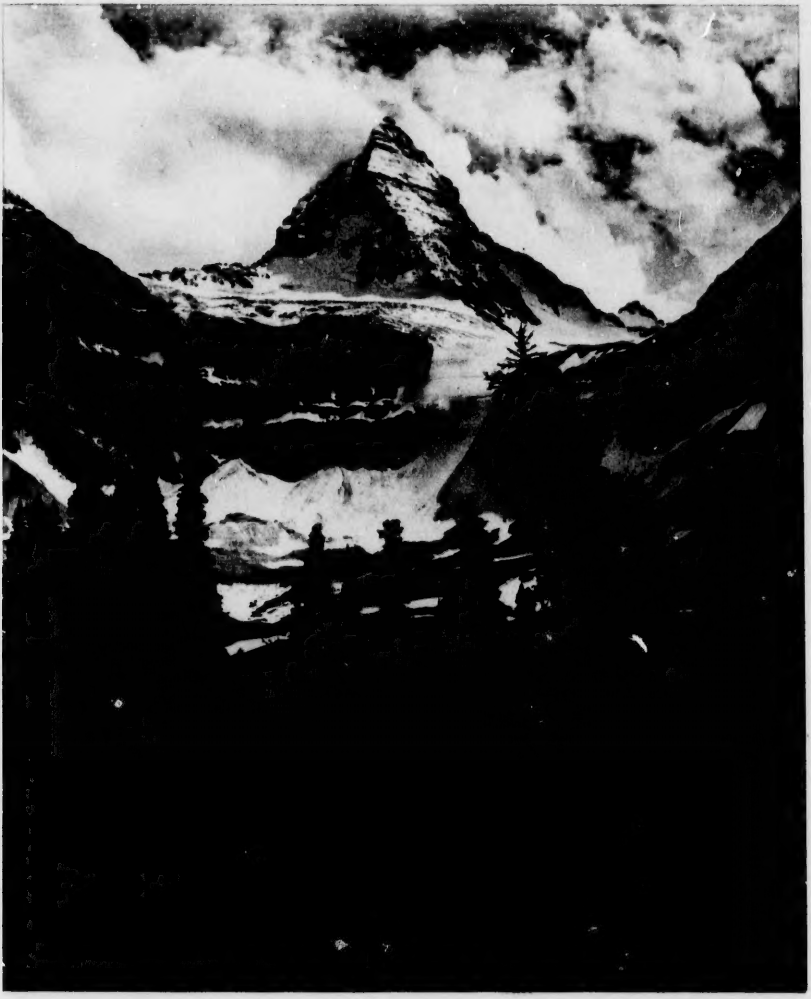

Mount Assiniboine.

THE ROCKIES OF CANADA

A REVISED AND ENLARGED EDITION OF
"CAMPING IN THE CANADIAN ROCKIES"

WITH MORE THAN FORTY PHOTOGRAVURE AND OTHER
ILLUSTRATIONS FROM ORIGINAL PHOTO-
GRAPHS BY THE AUTHOR

WALTER DWIGHT WILCOX, F.R.G.S.

AUTHOR OF "PICTURESQUE LANDSCAPES IN THE CANADIAN
ROCKY MOUNTAINS"

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The Knickerbocker Press, New York

PREFACE

THE Rocky Mountains of Canada offer much to those who love the study of nature or enjoy the rougher life in camp with its attendant hunting and fishing or the exercise of mountain climbing. No other mountains in the world combine with greater charm the gentle beauty of placid lakes, of upland meadows gay with bright flowers, or the vast sweep of green forests, with the stern grandeur of rugged cliffs, snow fields, and magnificent peaks which are characteristic of these Canadian Alps.

The encouraging reception given to his previous work has led the author, after several seasons of exploration in this fascinating region, to rewrite and enlarge *Camping in the Canadian Rockies.* Since the appearance of that volume he has visited many new and interesting places and secured many photographs which should give a better idea of this new pleasure-ground. The commencement of serious climbing by travellers from this country with Swiss guides, and by several noted climbers from abroad, has furnished material for a separate chapter on "Mountaineering." Other special chapters are devoted to a discussion of "Camp Life," "Hunting and

Fishing," and of that very interesting tribe, the "Stony Indians."

The work is illustrated by photogravure and half-tone plates from original photographs by the author. In books where natural scenery makes an important part, good photographs give a clearer idea of the country than word painting, however faithful, and with the knowledge of this fact no pains have been spared to get the best possible effect in every detail. The illustrations are selected from a large collection, and represent many toilsome climbs and foot journeys, made under the heavy and sometimes dangerous burden of a camera, when repeated visits to favoured spots year after year have not always met with success, and, owing to smoke of forest fires, or the accident of clouds and storm, there was often no reward for patient effort.

Two maps accompany the text; one a special contour map which shows the details of the country near Lake Louise, and the other a general map of the Rocky Mountains compiled from all the best maps hitherto published, supplemented by several recent sketches.

The author wishes to make, in this place, grateful acknowledgment to all those who, by kind suggestion or valuable information, have made this work more complete than would have been otherwise possible.

W. D. W.

WASHINGTON, D. C., June, 1900.

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THE ROCKIES OF CANADA

THE ROCKIES OF CANADA

CHAPTER I

THE CANADIAN PLAINS—CHARACTERISTICS OF THE ROCKIES —COMPARISON WITH OTHER GREAT RANGES OF THE WORLD —THE NATIONAL PARK OF CANADA—BANFF—A VISIT TO THE DEVIL'S LAKE AND GHOST RIVER VALLEY—SIR GEORGE SIMPSON'S JOURNEY THROUGH THE MOUNTAINS—AN INCIDENT OF INDIAN WARFARE—THE VERMILION LAKES AND SOME FOREST TREES OF THE MOUNTAINS

THE western plains of Canada, rolling in gentle undulations of hill and dale, extend east a thousand miles to the wheat fields of Manitoba, south to the arid plateau of Colorado, and north to the frozen regions of the Arctic and the Barren Lands. They appear to have no definite limits except on their western border where the Rockies rise out of them like rugged shores from a great sea. The herds of innumerable buffaloes which

formerly roamed here have disappeared through the criminal slaughter of the white man's rifle, though the Indians remain as a last relic of primitive Western life and their roving bands of horsemen give a dash of life and colour to the monotonous plains. For a score of miles or more there is a region of quiet beauty where the foothills make a borderland between plains and mountains. Here rivers fed by melting glaciers and snow freshets in the mountains make their way eastwards on their long journey over the plains. Their terraced valleys are covered by a thin turf which is brightened, at least in early summer, by prairie flowers, while the higher places are crowned with groves of a rough-barked evergreen called the Douglas fir. The Rockies, like an impassable rampart, terminate these hills and show a multitude of snowy peaks extending north and south beyond the limits of vision. These mountains have on their eastern side a rocky escarpment with jutting headlands towering in abrupt cliffs thousands of feet above the plains.

The great system of the Pacific Cordillera, which is generally called the Rocky Mountains, commences far south in Mexico and sweeps north to Alaska. The alkaline valleys of Nevada and the glaciers of Alaska, the cactus of Arizona and the evergreen forests of British Columbia mark the diversity of climate in a mountain system of such vast extent, while the granite domes of the Sierras, the bare and lofty summits of Colorado, and the snow-covered

dolomites and quartzite ledges of the Canadian Rockies illustrate the possibilities of mountain forms.

There are many reasons why the Rockies of Canada are interesting to the mountain climber and explorer. They have only recently been made accessible. Though these mountains have not the absolute height of those in Colorado, their apparent grandeur is greater because the valleys are both deep and narrow, richly forested and frequently guarded by cliffs which are precipitous for three, four, or even five thousand feet. Such rock walls are sometimes adorned by clinging trees and bushes or beautified by sparkling waterfalls playing at the mercy of changing breezes in their dizzy fall. Above are snow fields and hanging glaciers which often awaken thunders among the mountains by avalanches of ice. There are besides many lakes of blue or bluish-green colour, some of them hidden in the solitudes of evergreen forests, others enclosed by rugged cliffs, or exposed on the open expanse of upland meadows, and so they add beauty to their grand environment.

In comparison with other ranges of the world, the Canadian Rockies are unusually interesting. The Andes of Ecuador, Peru, and Chile have mountains from twenty thousand to twenty-three thousand feet above sea-level, or nearly twice the height of the greatest peaks of southern Canada. The highest mountains in the world, the Himalayas, reach such stupendous altitudes that no human being may hope,

in the immediate future at least, to reach their summits on foot. But these great ranges lie in parts of the world somewhat remote from the beaten tracks of travel. Whymper's description of the Andes in Ecuador and Fitz Gerald's of those in Chile show that the lack of vegetation on their higher parts gives them a bare and dreary aspect. Sven Hedin's account of the Kuenlun and other ranges in Central Asia proves that they are likewise comparatively bare of forests and that their grandeur is not accompanied by beauty. The Caucasus and Alps, especially the latter, alone equal or surpass the Canadian Rockies, because they have scenic grandeur of snow fields and forests combined with historical interest.

The Canadian Rockies have no single peaks or groups of mountains so far discovered equal to the Jungfrau, the Matterhorn, or Mont Blanc. Their wild and secluded valleys echo neither to the tinkle of bells nor the call of horn. Their interest depends on natural beauty added to the fact that their solitudes are as yet unfrequented by travellers. Where many of the larger rivers and mountain ranges remain as yet unexplored, every side valley offers some possibility of discovery. The mountaineer likewise standing on the windy summit of some high point commands a view, not of a limited circle of mountains as in Switzerland with the sea and plains beyond, but of a chaotic upheaval where countless peaks and ridges extend in every direction beyond the utmost possibility of vision — four hundred miles to the

Pacific, a thousand towards the Arctic, a thousand and more southwards.

All this region was practically an unknown wilderness before the completion of the Canadian Pacific Road. This undertaking was formally begun on the 20th of July, 1871, when British Columbia entered the Dominion of Canada and on which day the first survey parties commenced work. Eleven different routes were surveyed across the several ranges of the Rockies before the work of construction began. In 1880 the Government seemed unable to make any progress in so vast an undertaking and gave over its control to a private corporation. Under new management, what was at that time the longest railroad in the world was soon an accomplished fact, and in 1886 a new region was opened to mountain climbers and travellers.

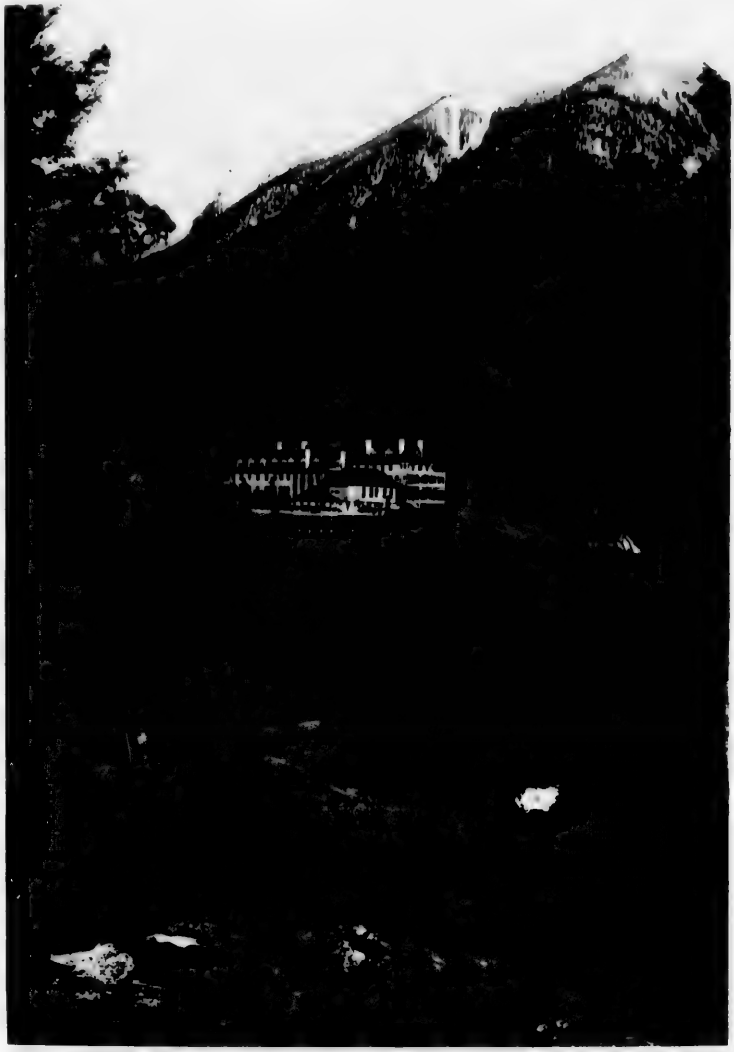
Places of unusual interest and beauty were then chosen among the mountains, of which the chief is Banff in the Canadian National Park. This reserve is similar in aims and government to our Yellowstone Park, and covers at present 260 square miles, and has a prospect of a much greater extent in the near future. A small body of the North-west Mounted Police is stationed here to enforce the game laws and keep order generally. Their exploits with rebellious Indians and desperadoes on the plains make the theme of many exciting tales. They wear a scarlet uniform, Wellington boots, and a small circular cap gayly tilted to one side of the head. Their duties are

easier now than a few years ago when there were laws in force against the sale of whiskey, for many desperate attempts were made in those days to smuggle in stimulants, which were regarded necessary to stave off the rigours of a severe climate. The thirsty inhabitants of Banff met with some success, though in the process many bottles were smashed and many barrels were rolled into the Bow River. Whiskey is easily obtained by everyone now, and the people have accordingly lapsed into temperance.

The village of Banff consists of a few scattered houses and stores, with the necessary schoolhouses and churches for the enlightenment of the people, and several hotels for the entertainment of summer guests. Some excellent roads and bridle-paths lead through pine and poplar groves to places of interest, such as the hot sulphur springs, the Spray valley, and Lake Minnewanka.

From the summit of Tunnel Mountain, which is exactly one thousand feet above Banff, a very good idea of the surrounding region may be had. The Bow River comes from the north-west, passes through the village of Banff, and after forcing a passage between great mountains, flows east to the plains, which are concealed by intervening ranges. Southwards, for many miles, may be seen the green valley of the Spray River, an unbroken mass of forest enclosed by long ridges, one of which, Mt. Rundle, is nearly ten thousand feet high and towers a mile above the Bow. To the north-east is seen the end of

Banff Springs Hotel.



Minnewanka Lake, beyond a series of gravel ridges which are relics of the glacial period.

About one mile from the village, on an eminence overlooking the junction of the Bow and Spray rivers, stands the Banff Springs Hotel. The Bow River makes a fine cascade between rocky walls just below the hotel, which latter is a comfortable place with accommodations for a large number of guests. The verandas command, from a considerable height, a magnificent view of the foaming river, while a vista of snowy peaks almost unrivalled on this continent is seen in the distance through a gap in the nearer limestone cliffs.

Several years ago, two gentlemen decided to ascend Cascade Mountain, one of the highest peaks of the neighbourhood. Instead of taking such advice as was offered, they would have it that a course over an intervening ridge was preferable to any other. They started out with the intention of returning within twenty-four hours, but instead mysteriously disappeared for three days. Then they returned, much to the relief of their friends, who were by that time alarmed for their safety. It appears that they had been lost in a region of burnt timber where they had wandered hungry and hopeless till some fate led them to a place of safety. No one knows how far they went or where, but it is certain that upon reaching the hotel they retired to their rooms and remained there the greater part of the ensuing week.

In the early summer of 1899, I made a camping

trip from Banff to Lake Minnewanka, or the Devil's Lake, and along its north shore to the chain of pools beyond. This lake, which is ten miles long, though very narrow, is like a bit of the Mediterranean set between high mountains. An excellent trail, much favoured by the Indians, follows the north shore. On the second day we passed the end of Devil's Lake and made camp finally by the borders of another small lake, in a place almost surrounded by mountains but commanding a view of the plains towards the east. Our camp was located in a meadow where innumerable wild flowers blossomed, and among them meadow rue and wild onions grew together. A few white blossoms — albinos — were mingled among the purple heads of the wild onions. These and the other mountain flowers were slowly drowning under the rising waters of the lake, which was fed no doubt by underground springs from the mountains.

This is the valley of the Ghost River, a strange vale of limestone formation where no streams flow. Torrents descend gullies and waterfalls dash over the vertical walls of this canyon, but each one of them disappears as it enters this Ghost River valley. It is supposed to have been the ancient valley of the Bow, of which these small lakes and the larger Minnewanka are relics of the former channel. A few miles to the east, the mountains end abruptly, and this entrance upon the plains is called the Devil's Gap. What with a gap, a large lake, and a mountain a

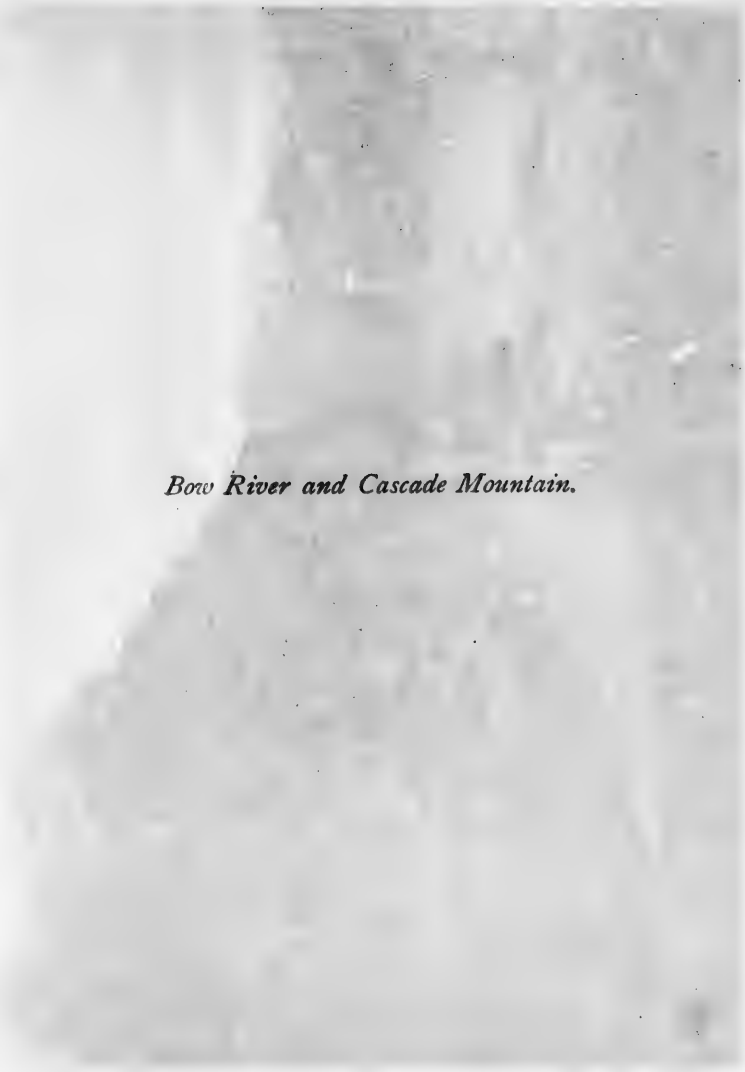
short distance to the north, called the Devil's Head, named after him, his Satanic Majesty seems to have a mortgage on all this region. All the large rivers of the north-west enter upon the plains from these kinds of openings which are called gaps. They are in reality noble thresholds or vestibules between the rolling plains and the mountains.

This Devil's Gap was the route by which Sir George Simpson entered the mountains in 1858 on his journey which he claims was the first overland expedition around the world from east to west. In this part of his journey his train, consisting of forty-five horses and a large number of packers, was guided by an Indian named Peechee. The guide Peechee seems to have possessed great influence among his fellows, and whenever, as was often the case, the Indians gathered around their camp-fires and gossiped about their adventures, Peechee was listened to with the closest attention. Nothing delights the Indians more than to indulge their passion for idle talk when assembled together, especially when under the soothing and peaceful influence of tobacco — a surprising fact to those who see them only among strangers, when they are usually silent.

A circumstance of Indian history connected with the east end of the lake is mentioned by Sir George Simpson, and illustrates very well the nature of savage warfare. A short time previous to his arrival, a Cree Indian and his wife had been tracked and pursued by five Indians of a hostile tribe. At length

they were discovered and attacked by their pursuers. Terrified by the fear of almost certain death, the Cree advised his wife to submit without making any defence. She was possessed of a more courageous spirit, however, and replied that as they were young and had but one life to lose they had better exert every effort in self-defence. Accordingly she brought down the foremost warrior with a well-aimed shot. From very shame her husband was forced to join the contest and mortally wounded two of the advancing foe with arrows. There were now but two on each side. The fourth warrior had by this time reached the Cree's wife and with upraised tomahawk was on the point of cleaving her head when his foot caught in some inequality of the ground and he fell prostrate. With lightning stroke the undaunted woman buried a dagger in his side. Dismayed by this unexpected slaughter of his companions, the fifth Indian took to flight after wounding the Cree in his arm.

One of the most interesting excursions in the vicinity of Banff is a boating trip up the Bow River and through the Vermilion lakes. This part of the Bow valley above the falls is flat and the river is here wide and deep, with a comparatively moderate current. A small stream half a mile from the boat-house leads to the Vermilion lakes, and on pleasant summer days is alive with canoes and boating parties. The stream comes from two shallow lakes not far away, and the voyage thither is full of interest. In places the waterway is too narrow to permit of the



Bow River and Cascade Mountain.

use of oars and you must paddle between tangled bushes and marsh grasses, dodging meanwhile the overhanging branches of willows and alders.

On these lakes there is an excellent opportunity to study some of the characteristic features of the Canadian Rockies. The surrounding mountains are covered with evergreens, part of that great subarctic forest which sweeps down from the north and clothes all Canada and the northern States in a garment of sombre green. The trees are spruce, balsam-fir, and pine. On the sunny south-facing slopes there are a few large Douglas firs which penetrate the lower mountain valleys from the foothills, but do not live at much higher altitudes than that of Banff, which is forty-five hundred feet above sea-level. The open glades are filled with small aspen poplars, willows, and birches, which are practically the only deciduous trees. These live only at the lower altitudes, but the spruces and balsam-firs cover the grey limestone mountains to a height of nearly three thousand feet above this valley. The red squirrels and chipmunks surprise the visitor by their tameness. Many of the wild birds are likewise very tame, and I have seen a number of finches engaged in picking seeds from bushes within two yards of where I was walking.

CHAPTER II

EARLIEST VISITS TO LAKE LOUISE — VIEW OF LAKE FROM THE CHALET — DESCRIPTION OF THE LAKE — SWAMP FLOWERS—THE WHITE-FLOWERED RHODODENDRON— THE TRAIL NEAR THE LAKE — CLIFFS OF THE WEST SHORE — THE DELTA OF THE INLET STREAM — THE ROCK SLIDE OF THE SOUTH SHORE—COLOUR OF LAKE LOUISE WATER—TEMPERATURE IN MIDSUMMER—SOME INSECT PESTS—BATTLES OF HORSE-FLIES AND WASPS—CHALET LIFE—SUMMER CLIMATE AT THE LAKE—THUNDER-STORMS—LIGHT EFFECTS AND COLOUR ILLUSIONS—AN OCTOBER VISIT TO LAKE LOUISE—AN AVALANCHE FROM MT. LEFROY—A WARNING OF WINTER'S APPROACH

LAKE LOUISE is near the Bow valley, about forty miles from Banff. Who first discovered the lake or whatever became of him is lost to history. It is probable that venturesome spirits came to this wild spot during the early years of railroad building, or possibly when the first surveyors ascended the Bow valley.

The earliest record of a visit that I have been able to find tells how, in 1882, Tom Wilson was camped with a pack train near the mouth of the Pipestone, when some Stony Indians came along and placed their teepees near him. Not long after, a heavy snow-slide or avalanche was heard among the mountains

to the south, and in reply to inquiry one of the Indians named Edwin, the Gold Seeker, said that the thunder came from a "big snow mountain above the lake of little fishes." The next day Wilson and Edwin rode through the forests to the lake of little fishes, which was named subsequently for the Princess Louise. The Indian told of two smaller lakes higher on the mountain side to the west, one of which, called by him the "Goats' Looking-Glass," is now known as Lake Agnes.

This region being away from the main routes of travel, and surrounded as it is by a knot of high mountains, no one hoped to find a pass in this direction, and no mention of it is made in the records of the earliest explorers. Somewhat more to our purpose is the fact that the place is now well known and Lake Louise may be reached with little effort.

Some time before 1890, a rustic inn was placed on the swampy shore of the lake, and a waggon road was made to open communication with the railroad at the little station of Laggan. In this way the first travellers came to Lake Louise. But one day in 1893 this log building caught fire, and burned to the ground, so that there were no accommodations and very few visitors that summer. However, with a friend I spent two weeks of that season, camping out in a tent among the tall trees near the shore, and in a small way we commenced our earliest explorations of the neighbourhood, which was at that time comparatively new.

The new chalet stands on a ridge near the water edge and gives a splendid, and possibly the best, view of the lake. The extreme length of this interesting body of water, which is shaped like the left human foot, is one mile and a quarter, but from the magnitude of the mountains on every side it appears at first glance to be a mere pool. The primitive simplicity of a virgin forest is shown in its densely wooded shores and the tangle of bushy banks where fallen trees, mossy in decay, are half concealed by underbrush and flowering shrubs. A narrow margin of angular stones and rounded boulders marks the shore line. From this the bottom drops away very suddenly to great depths, but you may see large stones under the water and water-logged hulks of old trees swept long ago from their positions on the mountain sides by avalanches.

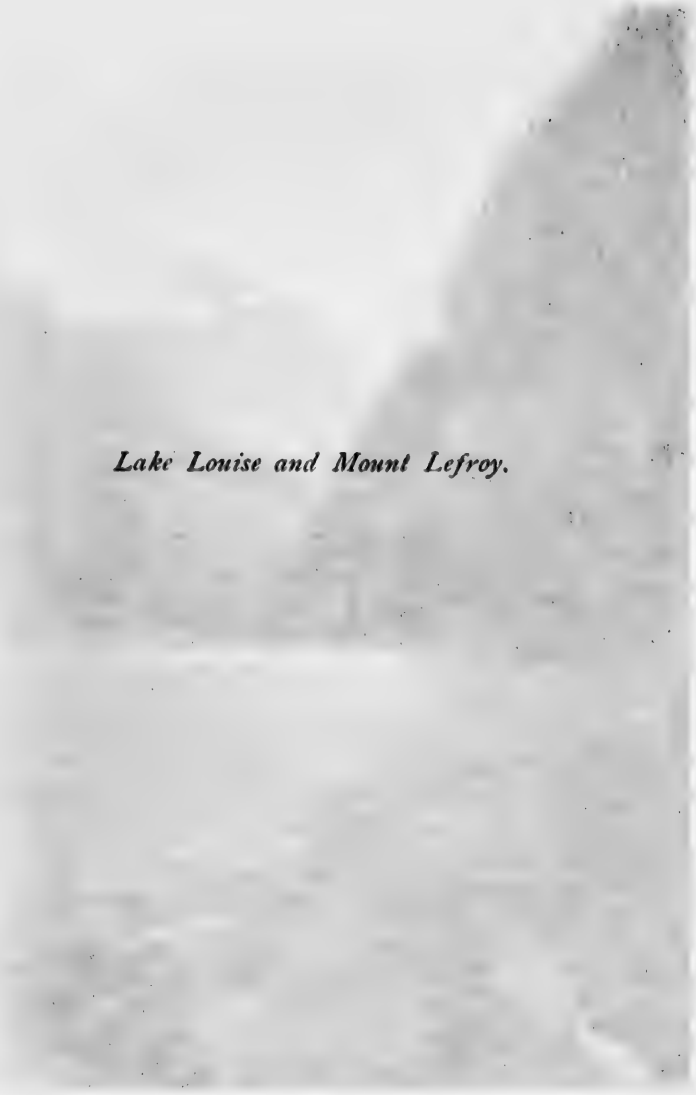
Lake Louise has the enduring attraction of nature in one of her grandest and most inspiring moods. It is a deeply coloured lake between wooded slopes, which sweep upwards on either side in unbroken masses of green, to barren cliffs above tree line. On the left the forest growth ascends more steeply to the base of a grand precipice, while farther down the lake a massive pile of fallen rocks rests against the mountain base and dips abruptly into the water. Mt. Victoria, a giant of the continental watershed, stands square across the valley end beyond the lake. Its brilliant ice fields make striking contrast to the dark forests and shadowy cliffs encircling the lake.

In early morning and during calms after a storm, the placid surface reflects the precipices and hanging glaciers of the distant Mt. Victoria, and brings that picture of Alpine grandeur in pleasing proximity to the beauty of spruce-lined shores and richly coloured water. These mountain outlines are so harmonious, and the colour changes so exquisite, that Lake Louise is a realisation of the perfect beauty of nature beyond the power of imagination. Though surprisingly attractive to the new arrival, Lake Louise, like many another beautiful phase of natural scenery, grows in impressiveness when experience has given a true idea of the distance and magnitude of the surrounding mountains.

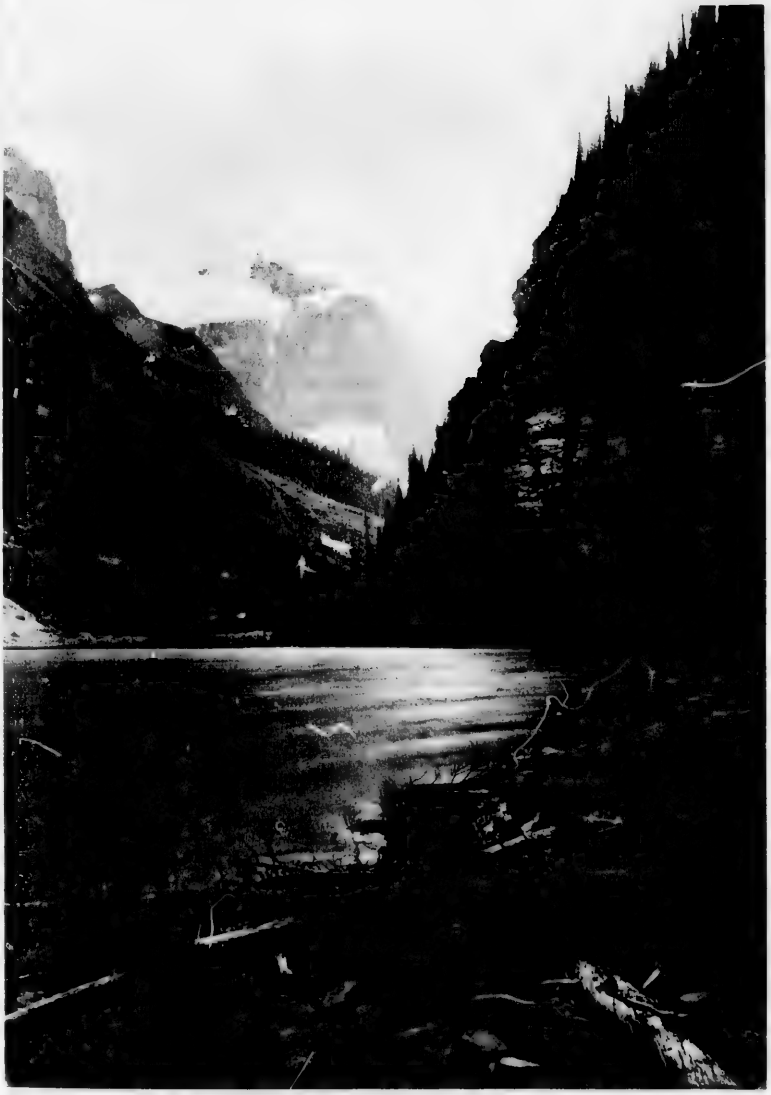
The swampy shore before the chalet makes a fine display of wild flowers even in these times when a new set of visitors comes every day to tear them up. Every spot in these mountains has its characteristic plants according to the nature of the ground and its altitude above sea. There is at this end of the lake a low and swampy shore, reeking with surface water from cold springs, unable to escape through the clayey soil beneath. Yellow violets and several species of anemones thrive here together with a considerable number of greenish orchids, and the fragrant lady's tresses, but by far the most beautiful flower is the yellow mountain columbine, a near cousin to the scarlet variety of our eastern rock banks. There are several shrubs, of which red-flowered sheep-laurel and white-tufted Labrador tea are most conspicuous,

the leaves of the latter being covered underneath with a rusty down. In the retirement of partial forest shade the beautiful white-flowered rhododendron grows. This bush has tender leaves of an oval shape, and is decorated in spring with large bell-shaped flowers, which hang their white corollas in artistic clusters among the foliage. In June you will find them in bloom near Lake Louise, but the bush grows higher on the mountains also, and there they blossom in July, or rarely in August. As in many other mountain plants, the succession of flowers throughout the summer season comes from the lowest valleys upwards to higher altitudes. The scrub birch, *Betula glandulosa,* has no flowers except inconspicuous catkins, but its long black wands and small round leaves soon become familiar to every visitor to these mountains, for this bush is rarely absent from any mountain meadow.

A rather rough trail closely follows the north shore, and with perseverance you may arrive at the far end of the lake. New mountains appear as you proceed, and the form of the lake, which from the chalet seems like a round pool, changes apparently into a long and narrow body of water. Through a vertical opening in the cliffs at the head of the lake, Mt. Lefroy looms in the distance, crowned with a helmet of perpetual snow and hanging glacier. The extreme end of the lake is guarded by a vertical cliff. The trail ascends to avoid a pile of stones which have fallen from above, and so traverses a grassy slope,



Lake Louise and Mount Lefroy.



where the blue sky above is portrayed in the petals of the most perfect forget-me-nots that I have ever seen. Their cheery yellow eyes and bright blossoms decorate tall branching plants, and make a pretty display throughout the entire summer.

Then the trail descends directly towards the cliffs, winds among great spruce trees, and enters a place of sombre and perpetual twilight, made by overhanging cliffs and forest depths. This is a marvellous revelation of the stupendous grandeur of these Rocky Mountains. The cliffs are disposed in horizontal layers of a hard and shiny quartz sandstone, stained red and orange transversely by iron, and vertically banded purple and black, where oozing waters drip from the trees above. Throughout the first three hundred feet the cliff rises sheer, or overhangs in some places where large blocks of this world masonry have fallen and left natural arches. On the higher places spruce trees cling with precarious foothold, their trunks parallel to the cliff, and so measuring the inspiring height of the precipice. The lapping water, a few yards below, touches the base of a pile of immense rocks, heaped in confusion as they have fallen from the crags, whence danger seems to threaten as you approach.

Emerging from this place of solemn grandeur, the trail leads down to a flat meadow at the head of Lake Louise. Here marsh reeds and white-tufted cotton-grass grow in the sand and gravel which a muddy stream has carried down to the lake from a glacier a

mile or more up the valley. This is in fact a delta, which is slowly growing as the coarse materials are added to the shore, while the finer sand and clay rush out in a tongue of milky water to defile the blue lake. About a quarter mile of the ancient lake basin has been filled in, but as this has no doubt required all the thousands of years since the glacial period, and the lake itself is exceedingly deep, many ages must elapse before the lake entirely disappears.

It is almost impossible to continue the journey around the lake, as the inlet stream is rather difficult to cross, and the south side of the lake for nearly a mile is nothing less than a tremendous conical pile of stones resting against the mountain side. This place is well worth thorough exploration in a boat. Some banks of snow, left by winter snow-slides, often remain till August, in one or two shady spots near the water. The rock-slide is composed of small and large fragments disposed in unstable equilibrium, at an angle of about forty-five degrees, and descending below the water at the same angle, so that at two hundred feet from the shore the depth is about two hundred feet. These rocks are richly coloured with lichens of various shades. Part of the slide is covered by birch and willow brush. Even a few spruces have ventured to grow in this perilous place, though the green vegetation is everywhere scored by narrow bands of bare ground, showing where rocks and snow-slides have swept resistlessly through. In fact it is rather dangerous to approach very near, even in a

boat, as stones, which travel at great speed, may fall at any time from the cliffs. Above the slide an almost perpendicular wall of rock ascends more than a thousand feet, and then rises less abruptly till it ends in the summit of Fairview Mountain 3300 feet above the lake.

The usual colour of Lake Louise, which varies considerably according to the effect of sunlight, is a robin's-egg blue. Tyndall says that this blue colour of glacial water and lakes, like that of the sky, is due to infinitesimally small particles of matter held in suspension. The water is very clear in early spring, but the incoming stream brings down a muddy freshet from the glacier during July and August, so that a milky colouring then appears and lasts till the frosts of October. The lake finds an outlet near the chalet in a broad and shallow stream, but after a few hundred yards this changes to a boulder-strewn torrent where it begins a rapid descent of six hundred feet to the Bow River. The deepest place in the lake is 230 feet, and this is near the rock-slide. With a long rope and a piece of iron pipe I got some mud from the bottom where the water was two hundred feet in depth. This mud is the very finest rock dust ground up by the glacier, which settles to the bottom century after century, where it remains as a fine clay and upon drying turns to a white powder. At certain times the surface of the lake is covered by a kind of yellow scum that on examination proves to be pollen from the spruce forests.

The temperature of the water, coming as it does from a glacial stream and melting snow, is very cold, and the highest point reached in August is 57 degrees, which is about the average daily temperature of the air for this month, at Lake Louise. There is a spring near the chalet which pours out a little stream of sparkling water only five degrees above freezing, and I found another at the north end of the lake only one and one-half degrees above freezing. Nevertheless in this very coldest water some brown confervas grow.

Small brook and rainbow trout live in the lake, but the fishing is not very exciting, as the countless flies and moths that are blown upon the water in the daily south wind supply an abundance of food. No reason is apparent why large fish are not found here as in other similar lakes in these mountains, but possibly the fine mud in the water makes a poor habitat for lake trout.

Nature rarely permits perfection, and the wonderful beauty of Lake Louise is somewhat balanced by mosquitoes which swarm from June till the middle of August. Newcomers are most annoyed, especially those from Europe where mosquitoes are scarce, but old-timers are practically immune from their attacks and from any poisonous effect of their bites. Several different species of mosquitoes are found here, and, not to go into the scientific names, they may be classed as small grey ones and large brown fellows, some that fly on silent wing, and others—the worst

of all — that announce their pestiferous presence by persistent singing. Fortunately the nights are cold enough to make them retire after about nine o'clock.

Another insect pest is a large horse-fly appropriately called the "bull-dog" from its ferocious bite, which feels like a fiery spark. They are among the toughest of all insects not protected by a case as beetles are, and fly away unharmed after receiving a hard blow of the hand. These bull-dogs frequent all the lower valleys, and appear during the warm summer days, when they drive horses nearly frantic. Their instinct leads them to bite only rough things and so leave your face and hands alone. Thus they spend most of their time prodding your clothes in vain and testing the rough hide of a horse, but they sometimes make mistakes.

The bull-dogs and wasps wage continual warfare, and this species of fly, which invariably gets the worst of it, would certainly disappear if the wasps were not so few, or the flies not practically inexhaustible. Their miniature battles are most interesting. Sometimes you will see a wasp pursue and capture a fly in mid-air, whereupon the contestants fall to the ground and for a moment it is impossible to follow the movements of either in their mad buzzing circles. From the whirling centre of motion come legs and wings, and in a brief moment the fly is powerless, shorn of every means of movement by the sharp jaws of the wasp. Finally the wasp cuts off the head of its helpless victim and leaves the

lifeless body that it may continue the chase. These acts of the wasps are assuredly cold-blooded and murderous, for the victim's body is neither eaten nor carried away for future use. Some old family feud must be at the bottom of it all.

Simplicity of chalet life at Lake Louise and perhaps even more the adventures on the mountains beget a ready acquaintance, which often ripens into lasting friendship. It is a study in human nature to watch the new arrivals day by day, and to observe the effect on each of the superb view which appears where the road emerges from the forest. Some people are overawed and stand on the lake shore in silent wonderment, while the majority exclaim "This is the most beautiful scene I have ever looked upon." A few, after a brief glance at the lake, hasten into the chalet for something to eat, thus balancing their hunger for material things and their love of nature, in uneven scale, but giving a testimonial at the same time to the value of mountain air as an appetiser.

Many interesting people are found among the visitors, while the good cheer and hearty comradeship that reign in this simple place are contagious. At evening a large fireplace is heaped with pine logs, and a fire is kindled which throws light and cheerful warmth against the chill of frosty nights. Then amid curling smoke and the clink of glasses the mishaps of the day are related. Often, too, you may hear, from travellers who have visited the remotest parts of the earth, perhaps thrilling accounts of

leopard, and tiger-hunts in the jungle, blood-curdling tales of treachery and massacre, or daring exploits in the Indian wars.

In May or early June the ice breaks up, and the forests near the lake are free from snow. The summer climate is cool and the highest temperature ever recorded is 78 degrees. The altitude above sea, as near as I could determine from a series of barometrical observations, is 5643 feet. The nights are always cool, and sometimes a frost occurs even in July or August. At daybreak the lake is usually placid and reflects, like a great mirror, the mountains and wooded shores, but so soon as the summer sun has tempered the frosty air the breezes begin to stir, at first imperceptibly in gentle zephyrs, which touch the motionless water some distance down the lake. Then rippled places appear, enlarge very quickly, and presently make a continuous band across the lake. One end of the lake may thus remain under the influence of wind for an hour or more while the other is quiet, but the strength of the breezes continues to grow as the sun gains power, till at noon the entire lake is almost invariably covered with little whitecaps. The wind dies away after sunset, and by midnight a frosty calm settles once more upon the lake. Then the roar of the glacial stream, a mile and a half distant, unheard by day, becomes plainly audible in the quiet night air.

The approach of storms is announced by wisps of cirrus cloud which move from west to east and

presently make a hazy veil which partially obscures the sun. A soft wind blows from the south-west, while the smoke of forest fires increases and adds to the bluish haze. Sometimes this smoke is laden with white ash-flakes, which may have travelled hundreds of miles from fires on the Pacific coast, or in the Kootenay country, and the distant mountains often withdraw from sight in a bluish obscurity. The first rain usually commences in a thunder-storm, which comes crashing through the mountains with its accompaniment of wind and hail, leaving the forests moist, and the peaks hung with clinging mists. A violent storm at night among these mountains is one of the most inspiring phenomena of nature. A continuous roar from the forest, stirred by the gale, mingled with the crash of conquered trees, is momentarily lost in thunder, echoed and rolled back from rock cliffs and mountain sides. A hoarse murmur, which is not the roar of ocean surf, but the lesser voice of a small mountain lake lashed to fury, comes from the shore.

The gloom of these night storms is followed by a period of calm, not less impressive in majestic revelations. At such times dawn shows the clouds low on the mountains, sulking, as it were, before the coming victory of the sun. The rising sun awakens uncertain movements in the motionless mist, and causes moist air currents to ascend and form new clouds, while others descend in counter currents, spin out into wisps of fog, and disappear again like

cloud ghosts into thin air. Suddenly a mountain, covered with a mantle of fresh snow, appears above the rolling masses, and the sun, breaking through, pours a shaft of light that in its long pathway leaps from mountains and clouds to fall into the lake. Changeable breezes make ripples on the calm water, then cease, only to breathe upon another place like the last dying gasps of storm.

The first two or three days after a severe rain are more beautiful than any others. It is impossible to tell or paint the beautiful colours, the kaleidoscopic change of light and shade, under such conditions. They are so exquisite that one refuses to believe them even in their presence, so subtle in change, so infinite in variety, that the memory fails to recall their varying moods. I have seen twenty shades of green, and several of blue, in the waters of Lake Louise at one time. Sometimes in the evening, when the quantity of light is rapidly diminishing, and the lake lies calm, or partly tremulous with dying ripples, marked vertically by the reflections of cliffs and trees, there is a light green in the shallowest water of the east shore, a more vivid colour a little farther out, and then a succession of deeper shades merging one into another by imperceptible change, yet in irregular patches according to the depth of water, to the deep bluish-green and blue of the middle lake. The eye wanders from place to place and comes back a few moments later to where the brightest colours were, but no doubt they are gone now,

and the mirror surface is dulled by a puff of air, while the sharp reflections have been replaced by purple shadows, or the obscure repetitions of the red brown cliffs above the water. It may be that a day, a year, or possibly a century will pass before those identical glories of colour will come again.

Among many marvellous effects of light and colour, one that occurred on a September afternoon remains distinct in my memory. The sky immediately overhead was clear, but massive clouds were brooding above the snowy crest of Mt. Victoria. A mysterious calm pervaded the cool air, and the water lay tremulous with that gentle motion which is the final pulsing of ripples before utter quiet settles on a sleeping lake. The distant valley and the farther reaches of water were obscured by a gloomy s' ade of motionless clouds. An arching band o 'ht bathed their edges in brilliant silver, overleapt the dark curtain, and descending, fell into the abyss of water near the north shore, to develop there a poisonous looking green colour, intensely strong in comparison with the darkness beyond. The sun's rays breaking through the clouds threw light on various parts of the lake, steeping in vivid sea-green the tawny reflections of iron-stained cliffs and the brilliant yellows of autumn willows and larches, only to bury them again in shadow. The lake seemed like a great basin filled with liquid under magic spell, where the quietly changing sunbeams resembled an enchanter's wand, which at the lightest touch

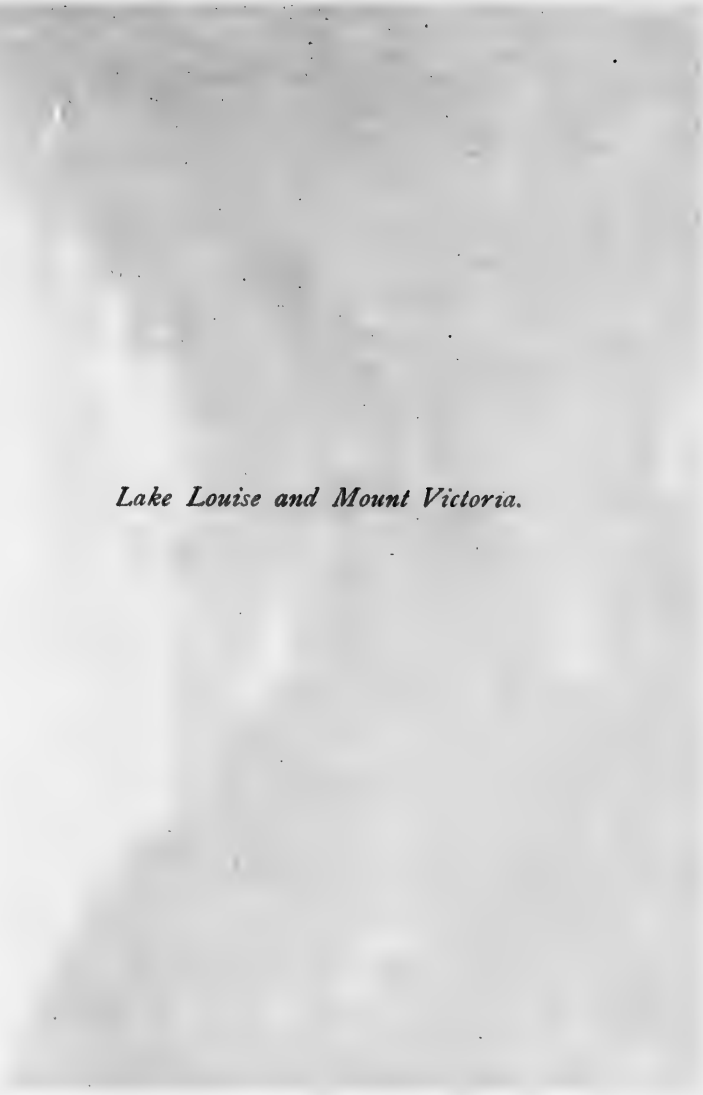
produced wonderful colourings and weird effects in the uncertain light.

I once made an interesting visit to Lake Louise in October. The previous September had been a month of disagreeable weather and continuous snow-storms. Then followed, as often happens in the Canadian Rockies, a month or more of bright weather which is the true Indian summer and has peculiar charms of its own. I could not resist the temptation, as the morning train approached the station of Laggan, to improve an excellent opportunity for another study of Lake Louise. Sunrise had been unusually brilliant and there was every prospect of a fine day. After breakfast at the station-house I set forth on the hard frozen road towards the lake. I carried lunch in my pocket, and an ever faithful camera strapped to my shoulders, while for a companion I coaxed an idle dog to accompany me. The air was cold, and the feeble October sun had not as yet struck into the forest and removed the frost from moss and fallen leaves. In somewhat less than an hour I arrived at the lake. All was deserted; the chalet closed, the keeper gone, and the lake restored to primeval solitude. Of insect life there was none, for the busy swarms of bull-dogs and mosquitoes had been annihilated by nights of frost, or else were hibernating till another season. Most all of the flowers were withered and frost-bitten, the deciduous bushes, but lately decked in gay autumn colours, were scattering dead leaves on the ground, while the

larches far up on the mountains marked a band of pale yellow between the green spruces and the bare slopes above tree line. However, the greater part of Rocky Mountain plants are evergreen, so that the spruces, balsams, and pines, no less than the undergrowth of heaths and mosses, find a way of defying winter by wearing a garb of perpetual summer.

The lake rested motionless and half lighted by the early morning sun. There is rarely much sky colouring at sunrise or sunset in these mountains. The dry atmosphere, especially at this season, has little power to dissolve the white light into rainbow hues and produce those deep and richly varied colours which occur in lowland regions or on the sea. The tints are pure, clear, and cold like the air itself. They are merely delicate shades or colour suggestions which recall those faint but exquisite hues seen in topaz, transparent quartz, or tourmaline crystals, in which the minutest trace of some foreign mineral has created rare spectrum colours and imprisoned them there for ever. This morning the snowy mountain tops were tinted a clear pink beautifully contrasted against an intensely blue sky.

My breath rose straight upwards in the calm air. The mirror surface of the lake was disturbed by some wild fowl — black ducks and northern divers — which frequent the lake at this season. Their splashings and the harsh cries of the divers came faintly over the water. It seemed strange that these familiar haunts could become so fearfully wild and lonely



Lake Louise and Mount Victoria.

merely because man had resigned his claims to the place. Suddenly a wild, unearthly wail, from across the water, the cry of a loon, which is one of the most melancholy of all sounds, startled me and abruptly ended my reverie on solitude.

Accordingly I walked down the north shore of the lake with the intention of going several miles up the valley and taking some photographs of Mt. Lefroy. The flat, bushy meadows near the upper end of the lake were cold, and all the plants and reedy grass were white with frost. The towering cliffs and castle-like battlements of the mountains on the south side of the valley shut out the sun and promised to prevent its genial rays from warming this spot till late in the afternoon. In the frozen ground I saw the tracks of a bear, made probably the day before. Bruin had gone up the valley somewhere and had not returned, so there was the possibility of making his acquaintance.

I was well repaid for my visit by seeing a magnificent avalanche fall from Mt. Lefroy, a rock mountain which rises in vertical cliffs between two branches of a glacier encircling its base. A hanging glacier rests on the highest slope of the mountain and forms a vertical face of ice over two hundred feet thick at the top of a precipice. At intervals, sometimes of days or weeks, masses of ice break from the hanging glacier and fall with thundering crashes to the valley.

I was standing at a point about two miles distant

when, from the vertical ice-wall, a fragment of the glacier, representing its entire thickness, broke away, and, turning slowly, began to fall through the airy abyss. In a few seconds of continued silence, for no sound had yet reached me, the heavy mass struck a projecting ledge, after falling half a thousand feet, and there was shivered into innumerable pieces and clouds of powdered ice, as though it had been rent by some great explosion. Simultaneously came the first thundering roar of the avalanche. Then for two thousand feet more the greater masses of ice led the way, leaping from ledge to ledge, some of them whirling round in mid-air, while others shot downwards like meteors, trailing behind snowy streams brushed off in their awful flight. In a long succession of white curtains resembling a splendid waterfall, the smallest particles followed after. The loud crash which signalled the first destruction of the icy mass now grew into a prolonged thunder, mingled with explosive reports of bursting fragments as they collided in mid-air or dashed against projecting parts of the precipice. It was like the sound of battle, where the clash of arms and the sharp crack of rifles are accompanied by a continuous roar of artillery.

The north face of Mt. Lefroy is a practically vertical cliff twenty-five hundred feet from base to top. Imagine then a precipice sixteen times higher than Niagara, at the top of which stands a hanging glacier crevassed into yawning caverns, ever moving

resistlessly forwards and threatening at any time to launch tremendous masses of ice into the valley below. Such avalanches are among the most thrilling spectacles of nature. The majestically slow movement of these masses as they commence to fall is a measure of much greater heights and depths than the eye, deceived by the clear mountain air, can at first appreciate. The first movements of these avalanches proceed in total silence, and the ice may fall a thousand feet or more while the sound is travelling the intervening distance, to awaken echoes among the cliffs and startle the mountaineer. I have often noticed that the thunder of avalanches from Mt. Victoria requires twenty seconds to reach the chalet, so that by that time there is often nothing but a white cloud to indicate what has occurred.

I got back to Lake Louise again about one o'clock. A local breeze made a narrow lane of ripples in the midst of a surface otherwise perfectly calm. This was one of those rare days when the lake is undisturbed by wind at midday under a clear sky, for the wind generally comes and goes with the rising and setting of the sun. The morning chill had been tempered by the October sun and a few forest birds were flitting silently among the trees, but the flowers and butterflies of summer were no more. It seemed the last expiring effort of autumn, when at any time a sudden storm might wrap the landscape in snow and bind the lake with ice. Even at this warmest time of day the feeble sun rays seemed unable to

fully heat the air, while the cold forest shadows and unmelted frosts gave warning that winter was preparing to descend from the mountains, and rule uninterrupted for a period of eight or nine months.

CHAPTER III

THE ENVIRONMENT OF LAKE LOUISE — ORGANISATION OF A CAMPING PARTY — ALPINE FLOWERS — LAKE AGNES — MOUNTAIN SOLITUDES — VIEW FROM THE LITTLE BEEHIVE — THE VICTORIA GLACIER — AN ACCIDENT ON MT. LEFROY — A RETURN FOR AID — INDIAN CONSOLATION — ASCENT OF A SNOW PASS — DISCOVERY OF A NEW VALLEY — EXPLORATION OF A DELIGHTFUL REGION — A FOREST BIVOUAC — INDIAN SARCASM

THE environment of Lake Louise is wild and rugged. The snowy mountains seen beyond the water, Mt. Victoria and Mt. Lefroy, form part of the continental watershed and are among the finest peaks of southern Canada. The spur ranges make a complex knot of splendid mountains towering from four to six thousand feet above the valleys. These latter abound in lakes and forests in striking contrast to the bare rocks and dazzling snow fields of the high altitudes. The forces of nature have made here a wonderful combination of gloomy gorges and tremendous cliffs, limestone pinnacles, and crevassed glaciers.

To explore this chaotic wonderland, then but little known, and to learn something of the neighbouring valleys and mountains, a party of college men was

organised in 1894, and met at Lake Louise in July. One member of our party was an enthusiastic hunter, another eager for the glories of mountain climbing, one was a disciple of Daguerre, while the two others were ready to join almost any undertaking whatever. Yandell Henderson, Lewis Frissell, and I were the first to meet at Lake Louise, but we had not been there long before our spirits were cheered by the arrival of our friend George Warrington. After a few preliminary excursions had been made, to get in condition for more arduous trips, Samuel Allen, with whom I had made several mountain ascents in previous years, completed our party towards the middle of July.

A common purpose helped the unity of our work, which was to explore the region immediately around Lake Louise, to ascend some high peaks, and to obtain photographs of the scenery. Through Warrington's ingenuity in contriving a winding reel, the lake was sounded and then mapped and contoured. Henderson added to our larder by his skill with a rifle, while the rest of us climbed mountains and made maps.

Our first excursion, and one that nowadays is very popular with visitors, was to Lake Agnes. A trail leaves the chalet, and by a course of zigzags through the forest ascends the sloping mountain west of the lake. The tall coniferous trees cast a cool shade and shut out the mountain world till an ascent of a thousand feet has been made. An older

trail then leads off to the right and presently comes out on a bare slope, swept of trees years ago by a winter snow-slide. A wonderful view is here disclosed. Mirror Lake, a small pool, is several hundred feet below, shut off from breezes by an encircling forest and a great cliff called the Beehive, whose tapering form and horizontal bands of red and grey rocks suggest its name. On the right of the Beehive, Lake Agnes appears, partly concealed by Lyall's larch, and from it comes a cascade that dashes over rocky ledges down to Mirror Lake. Mt. Lefroy and Mt. Aberdeen across the valley seem far higher than they did twelve hundred feet below. Where the avalanche has swept away the forest trees, a growth of bushes and herbs has restored the green colour to the mountain side and added beauty to it by means of a multitude of Alpine flowers. The great mountain anemone, showing rigid white flowers, and compound leaves divided again and again into fern-like tracery, grows here among the rocks. It should be called the snow-flower, for it is the first to awaken at the touch of spring and bloom at the edges of melting snow-banks. I have seen their bursting buds surrounded by an inch of snow ready to open in to-morrow's sun. Sometimes the great anemone blossoms in August or September on Alpine highlands, where perhaps the snows of winter have been unusually deep, and a false spring comes in autumn when the belated meadows are at last uncovered. This plant bears a tufted bunch of

plumed seeds which, at full development, is twelve or eighteen inches above the ground, and these tasseled heads make a conspicuous display in every high mountain meadow.

Somebody has said that edelweiss and Scotch heather grow on this slope. There are two plants resembling them, one an antennaria, and the other a heath called bryanthus, which has small purple blossoms remarkably like the Scotch heather. Why does not somebody import the seeds or roots of the Swiss edelweiss and plant them here? Then, as in the Alps, lovers can risk broken limbs to show their devotion. These Canadian Rockies have the grandeur and beauty of the Alps, but need their romance and poetry, picturesque mountain villages, cattle pasturing on the upland meadows, or the calls of the shepherd and yodel to awaken the forest echoes.

The trail, which is soon lost among the attractions of this place by anyone not devoting his attention to it, appears again on the farther side of the avalanche track. It makes a dizzy course along the face of moss-fringed cliffs, glistening in places with spring-water. Spruce trees have established a footing wherever there is the slightest opportunity, often on the very edge of the precipice, so that their spreading branches lean far out from the cliff, and their bare roots, like writhing serpents, are flattened in narrow fractures of the rocks. These wooden anchors have safely outlived a thousand mountain storms and may see as many more.

Lake Agnes.
In early July, 1895.

Lake Agnes is a wild tarn imprisoned by cheerless cliffs. At one end there is a narrow fringe of trees, but the lake on either side is bordered by barren angular stones, where nothing grows. Its northward exposure and the towering walls of a great amphitheatre keep out the sun and allow the snow to linger here all summer. One year the ice did not melt away till the end of July, and a thin sheet of ice often forms on clear summer nights. I have seen the lake covered with winter ice again in October. This lake is about one-third of a mile in length. The water is green, and, coming as it does from melting snow and springs, is so clear that the rough bottom may be seen at great depths. It is almost the only rock-basin lake that I have seen in the mountains and, like all other lakes that have not been sounded, it is fathomless.

The solitary visitor to the lake is soon oppressed with a sensation of utter loneliness. All these surroundings are desolate and a perpetual silence reigns, except for the sound of a rivulet falling over rocky ledges on one side. The faint pattering, echoed by opposite cliffs, seems to fill the air with a murmur which is faint or distinct at the mercy of fickle breezes. The elusive sound starts from every side, or dies away into nothing, and seems almost supernatural because the ear is powerless to tell whence it comes. The shrill whistle of a marmot, the hoary badger of the Rockies, often breaks this unwonted silence in a startling manner. Once a visitor to the

lake cut short his stay and hurried back to the chalet upon hearing one of these loud whistles, which he thought must be the signal of robbers or Indians about to commence an attack.

Many excursions of interest may be made on this mountain side, but none commands a finer panorama of the surrounding region than the top of a rock buttress called the Little Beehive. This is half a mile north of Lake Agnes and is merely a knob upon a greater mountain. Vertical precipices form the side towards Lake Louise, but there is a flat top of several acres extent covered with a most beautiful growth of the scraggly Lyall's larch, whose feathery needles merely filter but do not interrupt the streaming sunlight. A generous share comes to the huckleberry bushes and Labrador tea which grow underneath. They need all they get, for it is a long way north here, besides being seventy-five hundred feet above sea-level, where snow falls every month of the year and the air is warm only at midday. To the northwest you may see a lake near the source of the Bow River, Mt. Hector, towering like an uplifted castle eleven thousand feet above sea-level, standing between this valley and the Pipestone, then far away eastwards beyond Pilot Mountain (formerly a landmark for the surveyors) thirty miles down the Bow valley, and finally a nearer mass of giant peaks to the south-east and south, which are strangers to us yet, together with the now familiar peaks of Mt. Lefroy and Mt. Victoria. I have never seen this glorious

ensemble of forests, lakes, and snow fields surpassed in an experience on the summits of more than forty peaks and the middle slopes of as many more in the Canadian Rockies. And the best part of it all is, that a most indifferent climber can easily reach this place and, with care, a horse might be led to the summit.

Before our party was complete, Henderson, Frissell, and I made an excursion to Mt. Lefroy, which gave us more caution ever after and nearly resulted fatally for one of us. After crossing the lake in a boat, we ascended the valley for a mile to the end of a glacier which is the source of the Lake Louise stream. This glacier is formed from two branches, one of which fills the valley between Mt. Aberdeen and Mt. Lefroy, while the other comes from a narrow canyon called the Death Trap. Thus Mt. Lefroy stands like a precipitous island in a sea of ice. We crossed the muddy glacial stream and after climbing the sharp-edged moraine descended upon the glacier. This glacier is about three miles in length by half a mile wide. Its upper part, or *névé*, is comparatively clear, but many stones cumber the ice at its lower end, increasing ever towards the snout, till at length this dirtiest glacier of the Rockies ends dismally and indefinitely, buried beyond recognition in a confused moraine. The burden which the glacier carries is a mass of limestones and shales, which have fallen from the cliffs up the valley and are being slowly transported to the terminal moraine. You may walk

half a mile over the lower glacier and not once touch the ice under this covering of stones. There is one large pile of shale blocks, which have been apparently dumped upon the glacier all at one time, in which some of the stones measure fifteen or twenty feet in length.

Passing the ice-pillars, with their protecting caps of stone, streams gliding silently over the glacier surface in polished channels of ice, and the dark crevasses, into some of which these streams fall with a hollow roar, we came, after an hour of walking, to the foot of Mt. Lefroy. There is a snow couloir on the north side of this mountain which seemed to offer a possible way up a precipice about seven hundred feet high. Above this precipice there is an easier slope to the summit, and we thought that, once arrived there, nothing could prevent our ascent of the mountain. An exploration was accordingly begun of this couloir in an effort to see how far it was practicable in view of some future ascent. The snow slope, which was comparatively easy at first, soon increased to a pretty stiff angle four or five hundred feet above the glacier, and it seemed better to try the rock cliffs on one side. We were now enclosed by limestone cliffs disintegrated by frost. It was in fact one of those narrow and precipitous gulches of the Canadian Rockies which are most dangerous to climbers. On either side of us there were overhanging walls, decayed limestone pillars, tottering masses of broken stone with daylight

MT. LEFROY

showing through the cracks, and a thousand rocks resting threateningly balanced and apparently ready to fall at a feather's touch. That we were not dismayed at this hopeless prospect proves that we were more audacious than prudent.

At length when reaching upwards for a handhold, with a boost from below and my face against the limestone, I saw a large and dangerous-looking stone poised above us. "Fellows, we must look out for that stone," said I, "and not let the rope touch it." A moment after, Henderson and I were above this, climbing another rock ledge, when we heard the grinding sound of the large stone moving. We turned in time to see Frissell falling. The rope tightened and held him on a ledge ten feet below, but the tremendous stone, which must have weighed a ton, was rolling over and coming down upon him. For a brief but awful moment, helpless and immovable, as in a frightful dream, we saw the stone leap out into the air to descend upon our poor comrade, but he made a desperate movement, pressing hard against the cliff, and escaped the full force of the blow. Then the whole place resounded with the hollow rattle of falling stones as they danced in a shower of death below us.

We found that Frissell could not stand, one leg being perfectly helpless, while he was so dazed by the shock that he fainted twice in our arms. We were many miles from assistance and it was after two o'clock. Uncoiling the full length of the rope, one

end was fastened round his waist, and the other round mine. With an ice-axe buried to the head in the snow as an anchor, I paid out the rope and lowered our helpless friend fully fifty feet. Then Henderson went down and, anchoring himself in like manner, held him while I came down. This operation, repeated a number of times, brought us soon upon the comparatively level glacier. Removing my coat for him to lie on, I started to the chalet for aid. Heedless of crevasses, over the crumbling moraine and rough stones to the trail around the lake, running at all times except in the very roughest places, I covered in seventy minutes what had required three hours to walk in the morning. Arrived at the chalet completely exhausted, I hoped to find sufficient aid there to make up a relief party, but, as ill luck would have it, only Joe Savage, the cook, was at the chalet. Mr. Astley, the manager, and two Indians, Tom Chiniquay and William Twin, were on the mountain near Mirror Lake. So while Savage got poles and canvas ready for a litter, I commenced a tiring climb for the others. Coming at length upon William, where he was cutting out a trail, I addressed him in the Indian way of speaking English: "William, three white men go up big snow mountain. Big stone come down—hurt one man. I think Tom, Mr. Astley, you, all go up snow mountain—bring white man back." William asked, "Kill him?" but his face showed anxiety till I told him that our friend was still alive, though he must hurry. Dropping his

axe, he ran off for the others who were higher upon the mountain, while I returned to the chalet and made ready some food and whiskey. Thus a relief party of four was soon started.

On the back of an Indian cayuse I galloped away to Laggan and telegraphed for Dr. Brett to come from Banff. Then to division headquarters, "How much for a special engine from Banff to Laggan?" The reply was in terms too high for our purse, and I arranged for a hand-car crew to bring up the doctor. The distance is thirty-six miles and there is a stiff grade with a total ascent of five hundred feet.

Meanwhile the rest of the party on the glacier, seeing me disappear about three o'clock beyond a swelling mound of ice, were left to pass the tedious hours in lonely contemplation. On a hot summer day a glacier is a fairly comfortable place abounding in cool breezes and bright sunshine. A decided change, however, takes place immediately after the sun disappears, as it soon did here, behind Mt. Victoria. Ice-needles formed on the pools, the genial breezes ceased, and a penetrating draught came down from the higher places. The long hours rolled by and still no sign of aid appeared. In imagination they recounted the possibility of its never arriving, thinking that I might have fallen into a crevasse, or sprained my ankle while on the moraine, and that no one would ever think of coming to them. At length in desperation they made a plan to leave the glacier by the shortest way, at

whatever risk to life or limb, rather than die of cold on this cheerless sea of ice, but before such plans were carried out they discovered, with a field-glass, a boat leaving the far end of Lake Louise. In half an hour the boat had crossed the lake, and then for an hour or so no further sign of help was seen. Suddenly four moving figures appeared like black dots in the distance and they knew that a rescue party was coming at last. At seven o'clock, or more than four hours after the accident, our injured companion commenced his journey to the chalet in a litter hastily constructed and which, at best, only served to lift him a little above the ground. William observed his woebegone appearance and heard his groans with concern, but with true Indian lack of tact, frequently during the painful journey entertained the invalid as follows : " You think you die ? Me think so too."

While Frissell was regaining health and strength we made several expeditions to the adjacent valleys, and, among others, one of them proved the most delightful that I have ever taken in this region. We as yet knew nothing of the mountains east and south of Lake Louise. Certain glimpses of a valley beyond Mt. Aberdeen and Mt. Lefroy had been caught in our various climbs, but they gave only imperfect ideas of the geography of all that region. To push our exploration into this new and doubtless attractive place seemed a most desirable thing. Our plan was to explore the Lefroy glacier and force a passage, if

possible, over a snow pass eastwards, where, no doubt, all this unknown region would lie before us. Accordingly one day near the first of August our party of four might have been seen traversing in Alpine fashion the ice-fields near Mt. Lefroy. This entire valley, which is more than seven thousand feet above sea-level, is filled with glacier ice and perpetual snow. From the entire absence of trees or vegetation of any kind it is impossible to judge distance and heights of mountains in this place. It is a veritable canyon, of magnificent though desolate grandeur, with the bare limestone slopes of Mt. Aberdeen on the north, and on the other side the north face of Mt. Lefroy, which has a total height of nearly four thousand feet from the glacier. At the valley end there stands a curious pointed mountain, shaped like a bishop's mitre, and on either side of this there is a col, or snow pass, one of which we hoped to ascend.

As we were marching over the glacier, which was covered with snow and therefore somewhat dangerous, Warrington, who was third on the rope, suddenly broke through the frail bridge of a crevasse. "I could hear," he afterwards told us, "the noise of snow falling under my feet and the gurgling of water at the bottom of the depths over which I was suspended." We pulled him out of this dangerous place without anyone else getting in, and reached the foot of the snow passes without further accident. The one on our left seemed easier of slope than the

other. It was very soon apparent that we had a considerable amount of work before us. Allen led the way cutting steps in the snow, for the slope was very steep and we had no desire to slide into one of the great crevasses which made the place formidable. We crossed some of these treacherous caverns by means of snow bridges, but others we were compelled to pass around, and in such places had inspiring views of blue grottos hung with dripping icicles. From the darkness of these yawning death-traps came the sound of sub-glacial streams.

After three hours of slow and tiring work we had climbed only one thousand feet. It was a cloudy day with a damp and cheerless atmosphere, and at this altitude of eight thousand feet there were occasional showers of hail and snow. Chilled by the long exposure and the necessary slowness of our progress, every member of the party became silent and depressed. It seems to me that the circulation of the blood has much to do with the mental state and that courage depends in a large measure on the pulse. The panting soldier will face a cannon's mouth, but dreads unseen danger when chilled by night watching.

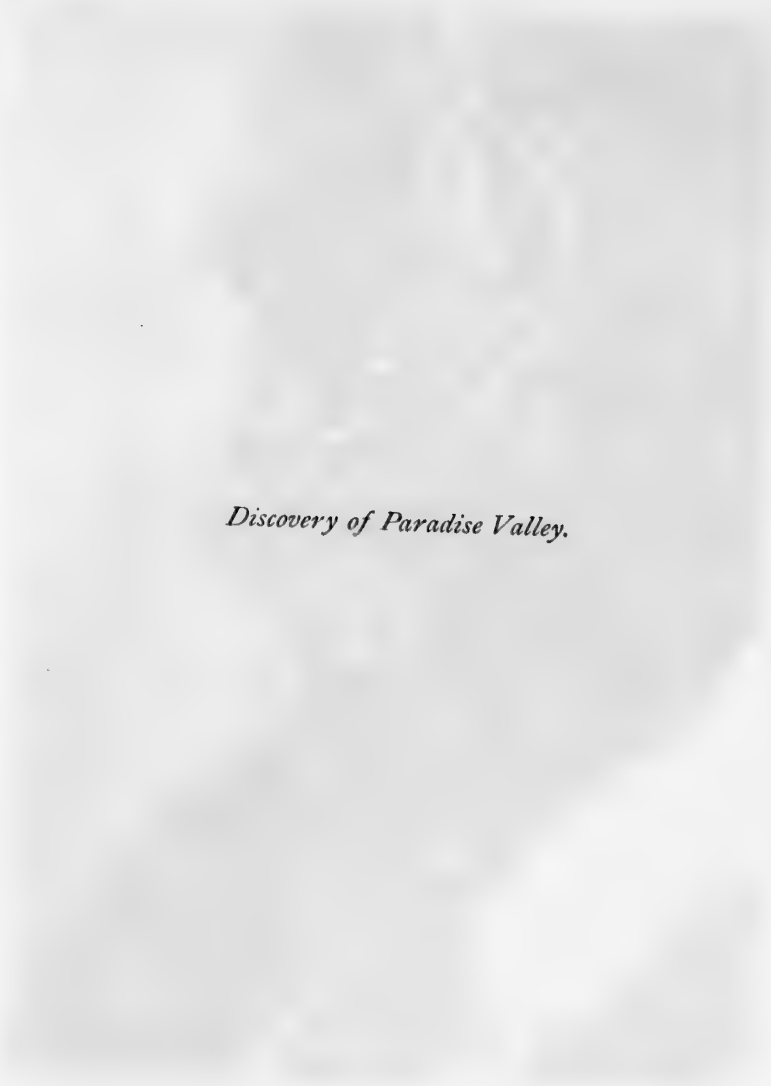
To judge by our surroundings alone, we might have been exploring some lonely polar land, for our entire view was limited by high mountains covered with glaciers and snow and altogether barren of vegetation. At such times you wonder why you

came. Why not stay at home and be comfortable? Every climber feels such temporary repulses, when the game is not worth the candle and he decides once for all to give up mountain climbing. Like the ancients vowing sacrifices and temples to the gods in the thick of battle or on the point of shipwreck, which vows they forgot very speedily when they arrived at safety, the mountaineer forgets his resolves under the genial influence of hot Scotch and a comfortable camp. These Rockies have many surprises for the explorer, and there was one in store for us.

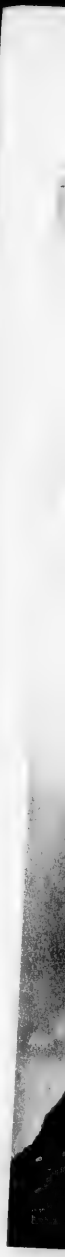
We sought temporary rest on an outcropping ledge and tried to regain some strength by eating lunch. The summit of our pass now seemed only a short distance above, but we had been deceived so many times on this interminable slope that we put no faith in our eyes. Recommencing our climb at a quicker pace, for the slope was easier and we were most anxious to see the view eastwards, we were soon near the summit. The last few steps to a mountain pass are attended by a pleasurable excitement equalled only by the conquest of a new mountain. The curtain is about to be raised, as it were, on a new scene and the reward of many hours of climbing comes at one magical revelation.

Arrived on the summit of our pass, 8500 feet above sea-level, we saw a new group of mountains in the distance, while a most beautiful valley lay far below us. Throughout a broad expanse of meadows and

open country many streams were to be seen winding through this valley, clearly traceable to their various sources in glaciers, springs, and melting snow-drifts. With all its diversity of features spread like a map before our eyes, this attractive place was seen to be closely invested on the south by a semicircle of high and rugged mountains, rising steeply from a crescent-shaped glacier at their united bases. The encircling mountains extending then to the left, hemmed in the far side of the valley in an irregular line of peaks, to terminate, so far as we could see, in a double-pointed mountain with two summits about one mile apart. The strata of this mountain had been fashioned by ages of exposure into innumerable forms of beauty, like imitations of minarets, pinnacles, and graceful spires. The mountain itself resembled a splendid building, with nature as architect, the frost and rain for sculptors. Its outlines showed a combination of gentle slopes and vertical ledges like the alternating roofs and walls of a cathedral. On one side of this mountain, where nature had evidently striven to surpass all other efforts, there rose from the middle slopes a number of slender stone columns, apparently several hundred feet high. They were strange monuments of the past which had survived earthquake shocks and outlived the warring elements while nature continued her work. Compared with these columns, the pyramids of Egypt, the palaces of Yucatan, and the temples of India are young, even in their antiquity.



Discovery of Paradise Valley.



At the time of our arrival on the summit, a sudden change took place in the weather. The wind came from another quarter, and the monotonous covering of grey clouds began to disclose blue sky in many places. The afternoon sun poured shafts of light through the moving clouds, and awakened bright colours over forests, meadows, and streams.

This beautiful scene opened before us so suddenly that for a time the cliffs echoed to our exclamations of pleasure, while those who had recently been most depressed in spirit were now most vehement in expressions of delight. A short time before no one could be found to assume the responsibility of such a foolhardy trip, but now each member of our party had been the proposer of this glorious excursion. We spent a half-hour on the pass, and divided our work so that while one took photographs of the scene, another took angles of prominent points for our map, and the rest built a cairn to celebrate our ascent of the pass.

It was decided, by each one no doubt to himself, but at any rate by the party unanimously, to explore this new valley whatever should be the result. Though it was late in the afternoon and there was small chance of reaching the chalet that night, the desolate valley behind repelled, while the new one seemed to bid us enter.

Fortunately, a long snow slope led far into the valley from the pass. This we prepared to descend by glissading, all roped together, because one or two

of our party were undergoing their first Alpine experiences. The slope was pretty steep, and we were just well under way in our descent, when someone lost his footing and commenced to slide at such speed that the end man was jerked violently by the rope, and lost his ice-axe as he fell headlong. With consternation very evident on their faces, our two comrades came rolling and sliding downwards, head first, foot first, sometimes one leading, and sometimes the other. Their momentum was too much for the rest of us and, even with our ice-axes well set in the soft snow, we all slid some distance in a bunch. Owing to the complicated figures executed in our descent, it required several minutes to unwind the tangled ropes in which we were caught. Then a committee of one was appointed to go back and gather the scattered hats, ice-axes, and such other personal effects as could be found.

In a short time we had descended fifteen hundred feet to the valley bottom. We had thus in a few moments exchanged the cold and dreary upper regions for the genial warmth of summer. Humboldt says: "In the physical as in the moral world, the contrast of effects, the comparison of what is powerful and menacing with what is soft and peaceful, is a never-failing source of our pleasures and our emotions." By our rapid change of altitude we had passed through all gradations of climate from polar to temperate, and now found ourselves surrounded by meadows of rich grass, gay with the wild flowers of

midsummer, and open groves where squirrels were chattering, and the wild conies and other rodents were staring at us as we passed along. There were not a few mosquitoes in evidence also.

We followed a small stream and saw it finally grow into a river. Pursuing our way with rapid steps, like adventurers in nature's fairyland, where every moment reveals new wonders, we came at length to an opening in the forest, where the falling stream dashed among great stones strewn in wild disorder. They were colossal fragments of sandstone hewn by nature into angular blocks and poised one upon another as though they were ready to fall from their insecure positions. After several hours of walking, the stream became a large, muddy torrent which swung from right to left every hundred yards or so, and was now too wide and deep to cross.

The tremendous cliffs of Mt. Temple, one of the highest of the Canadian Rockies, guard the east side of this valley. For the space of three miles its precipices present an uninterrupted wall of rock, four thousand feet from base to top and a total height of five thousand feet from the valley. Henderson and I led the way, and at length lost sight of the others, who preferred a slower pace after such unusual exertions. In the early evening we came to a swampy place, beyond which we recognised the broad opening of the Bow valley. Here we waited some time for our friends, who were a long way behind, and then at length wrote a note and fastened it to a pole

in a conspicuous place. It read: "We are going to climb the ridge to the north and try to make the chalet to-night. Advise you to follow us." On the top of the pole we cut a slit and pointed a splinter of wood in the exact direction we were to take.

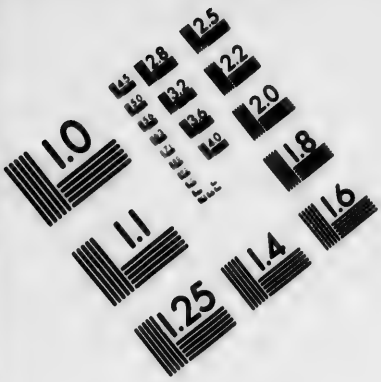
Having accomplished these duties in the best manner possible and in spite of innumerable swarms of mosquitoes from the swamp, we walked at our best speed, not relishing the prospect of a cheerless bivouac overnight after our long fast. Encountering the usual obstacles of fallen timber, we reached Lake Louise, by good fortune, at eight o'clock. After shouting in vain for someone to send over a boat, we forded the stream and entered the chalet, where a sumptuous repast was prepared forthwith and to which we did justice after our walk of twelve hours' duration.

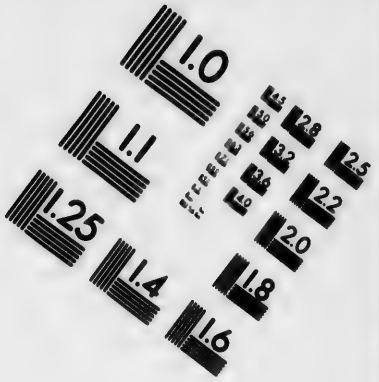
Our friends did not appear till morning. It seems that they discovered our note, but decided not to take our route as they thought it safer to follow the stream to the Bow. This, however, proved much farther than it appeared, and they had not proceeded far before they became entangled in a large area of fallen timber, where they were soon overtaken by night and compelled to give up all hope of reaching Lake Louise till morning. In the dark forest they lit a small fire, and were at first tormented by mosquitoes, and later by the chill of advancing night, so that sleep was impossible. The utter weariness of exhaustion, embittered by hunger and sleeplessness,

amid clouds of voracious mosquitoes, was only offset by the contents of a flask, with which they endeavoured to revive their drooping spirits and nourish the feeble spark of life till dawn. Fortunately the nights in this latitude are short, and at four o'clock they continued their way to the Bow River, which they then followed to Laggan.

A week later, a little column of smoke was seen rising from the woods toward the east, and from Laggan it was reported that a large area of the forest was on fire. Some pointed the finger of scorn at us and held our party responsible. William Twin, our Indian friend, said, "Me think two white men light him fire," to which we replied that this was impossible as the fire had broken out nearly a week after our visit. William then met our arguments with this sarcastic fling: "Oh no, white man no light fire. Me think sun light him."

A gang of section men with axes and water-buckets was immediately despatched from Laggan to fight the fire, which, thanks to the weather, did not prove very serious and was extinguished in two days.





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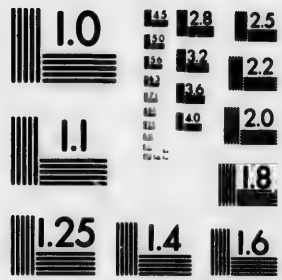

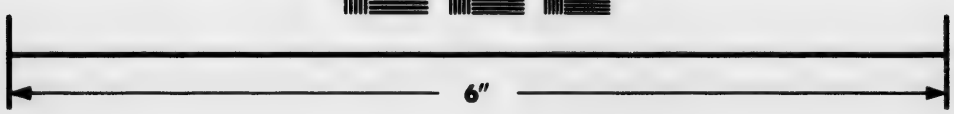

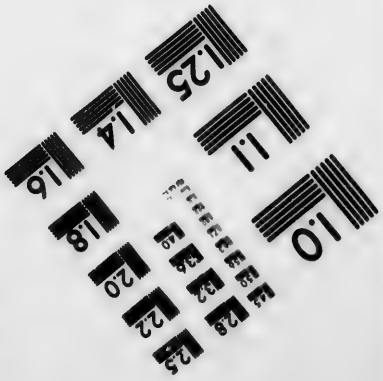

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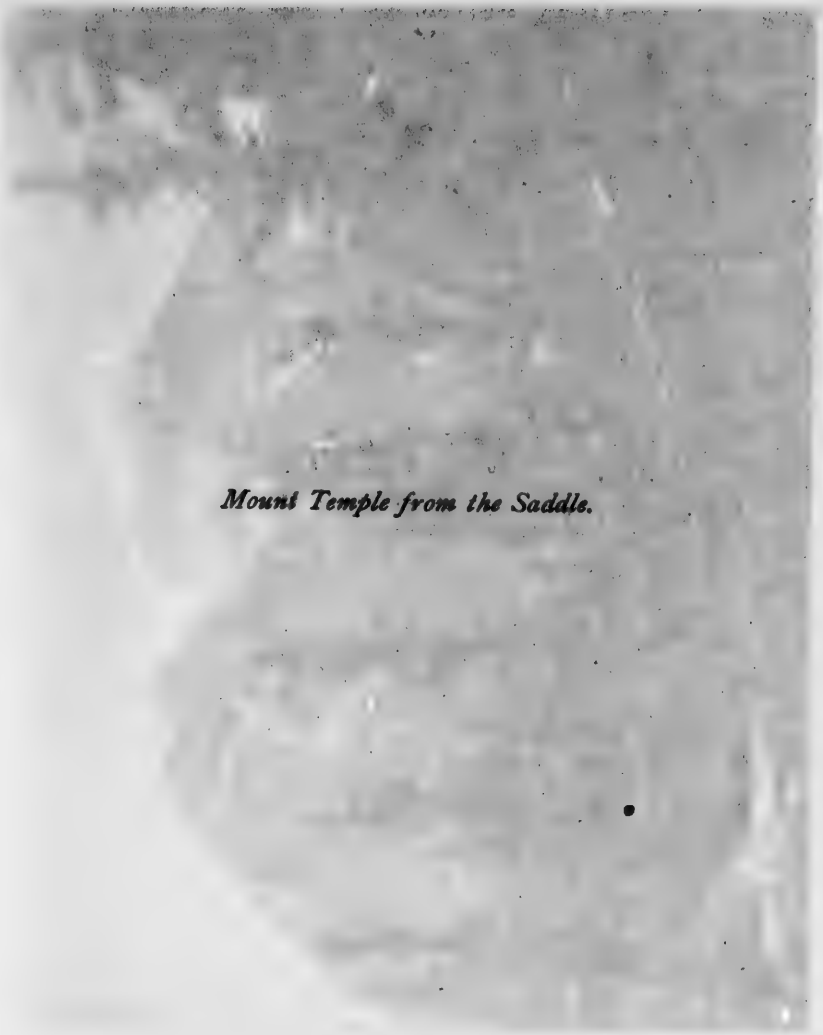
CHAPTER IV

AN UPLAND MEADOW — VIEW OF MT. TEMPLE — WE PLACE OUR CAMP IN PARADISE VALLEY — DIFFICULTIES OF TRAVERSING THE PATHLESS FOREST — A MARVELLOUS SOMERSAULT — THE UPPER END OF PARADISE VALLEY — DISCORDANT FLOWER COLOURS — THE FIREWEED — THE SPRUCE AND BALSAM — THE BLACK PINE AND WHITE-BARKED PINE — THE LYALL'S LARCH — ITS ENDURANCE OF COLD AND STORMS — THE MARMOT AND PICA — THE VALLEY IN WINTER

THE beautiful place which had been discovered in such a delightful way we called Paradise Valley. Our route will never be popular except with mountaineers, and comparatively few will see this valley from the Mitre col. The lower end of Paradise Valley can be seen to better advantage from an elevated place called The Saddle, a part of Fairview Mountain, east of Lake Louise. An excellent trail has been made and you may now ride there on the back of an Indian pony in an hour. The Saddle is an upland meadow between a craggy elevation on one side and the great conical mass of Fairview Mountain to the north. This alp, beautified by waving grass and bright flowers, alternating with scattered groves of Lyall's larch, is so elevated that



Mount Temple from the Saddle.

it commands an inspiring view of the Bow valley and of Mt. Temple. The latter is a splendid mountain (the highest seen from the Canadian Pacific Road), and is surpassed only by the giant Mt. Assiniboine to the south, and by those great snow mountains, Forbes and Lyell, near the source of the Saskatchewan.

The meadow dips gently southwards, suddenly breaks up into rocky crags, and then drops abruptly fifteen hundred feet to the bottom of Paradise Valley, where the stream resembles a narrow band of silver, winding in sinuous course through the forests. Standing on one of these flat-topped ledges, where a stone from the hand drops one hundred feet before touching the cliff, you may enjoy one of the most inspiring views in the Rockies of Canada. A small, blue lake rests against the base of Mt. Temple, somewhat elevated above the valley, hemmed in by forests, and sparkling with diamonds when the sun is south. It is more than five thousand feet from the water of this lonely pool to the top of Mt. Temple. A glacier, free of all dirt-bands and stones, for there are no liffs above to scatter rock-falls upon it, crowns the mountain summit and, at intervals, makes ice avalanches when its hanging edge breaks away. These avalanches are infrequent, but the roar of ice in its fall of several thousand feet may be heard at Laggan, six miles distant.

One route to Paradise Valley lies over this Saddle, but a far shorter way is through the forests from Lake

Louise to the mouth of the other valley, which is only three miles distant and on about the same level. We decided to make a camping expedition into this region and explore it at leisure, so we procured three or four horses at the chalet and made ready some provisions and blankets. It would not have required a very large book to contain all we knew about packing horses at that time. They say the Bedouins pack their camels in a singular manner by winding thongs round the animals' bodies, packs and all, and at their journeys' end simply cut the fastenings, whereupon everything comes loose. Our horses must have been packed in a similar manner, but at all events we knew absolutely nothing about the "diamond hitch."

Allen and Henderson said they would go ahead and get a camp settled near the end of Paradise Valley. To help drive the horses, two Indian boys were engaged, but on the second day, after a hearty breakfast, they deserted. Frissell and I came along in two days with another horse and some auxiliary supplies. I shall never forget that night when we were searching for the camp. We had been leading the horse, an obstinate old brute, more than six hours through the pathless forest, and had arrived at length not far from the valley end, where, however, there was no sign of a camp. A stormy night was coming on and a fine drizzle commenced to wet the underbrush. We untied the rifle and fired several shots as a signal of distress. Hollow echoes from the forest gloom and the long-drawn repetitions farther and farther

away mocked our despair. The poor old cayuse was a picture of silent misery with his head hanging down, the rain dripping in streamlets from ears and mane, and his body steaming with moisture. We prepared to make a night of it in the wet forest with no tent to protect us, no axe to cut fire-wood, and little chance of cooking anything, though there were some cold canned provisions somewhere on the horse unless they had fallen out of his packs. I put on a "slicker" and made a last search for the camp in a rapid excursion up the valley. Some large whitish stones loomed through the darkness and several times deceived me into the idea that they were our tent. At length I found the place on the farther side of a stream and gave a shout. There was no fire before the camp, which made it so difficult to find. In another hour the horse had been brought up and a fire made, large enough to dry our clothes and cook a fine dinner. The next day was spent in cutting fire-wood and boughs for beds, to say nothing of making camp generally comfortable.

Several trips were made afterwards between the lake and camp to replenish our stock of blankets and provisions. As might be supposed where the explorers were inexperienced and the country unusually rough, some remarkable things happened on these journeys. There was a spot about two miles within the valley entrance that always put our patience to a severe test. On one side of the stream was a place made fairly impassable by fallen trees crossed two or

three deep. The other bank, which we were compelled to take, was covered by an unusually dense forest, where a tangled underbrush and fallen timber partially concealed the pitfalls of a moss-covered rock-slide. There were deep holes between the stones, and in many places underground streams, which we could hear gurgling beneath our feet, had washed out the soil. To lead a horse through this place required considerable skill and courage. Without guidance the poor beast would stand motionless, but to choose a path while leading him was a precarious occupation, for the very first hole was enough to frighten the animal so that, instead of going more carefully, he usually commenced a wild rush till he fell. In these frantic struggles we were occasionally trampled on, while the packs were smashed against the trunks of trees or torn off altogether.

Our usual manner of procedure was to have one of our party ahead to select rapidly open places in the forest, while about twenty-five yards behind came another whose duty it was to find the pathfinder, and if possible improve on his route. Then came the horse led by a third, while the rear of our little procession was brought up by two others charged with the responsibility of picking up whatever articles fell out of the packs.

The following incident, which is related merely for the sake of historical accuracy and to show the possibilities of the country, is offered with no fond hope whatsoever that anyone will credit the tale.

It happened that we were pursuing our way through the woods in our usual manner, when the leader came to a tree which leaned over the trail at an angle. It was small enough to be limber, and large enough to be strong. Moreover, it was too low for the horse to pass under, and too high for him to jump over. Approaching the slanting tree, the leader saw the pack-horse rear in the air and prepare for a jump. He thought it best to get out of the way, but in his haste stumbled and fell headlong into a bush. Meanwhile the horse, a stupid old beast, prepared for the effort of his life, and with a tremendous spring jumped high in air, but unfortunately his fore-feet caught in the tree, which swung forward a little with his weight, and then returning like a spring, turned the animal over in mid-air. The poor beast fell on his back about five yards farther on, and remained motionless as death, with his four legs pointing towards the sky. But this was not all, for the tree swung back violently and caught one of our party on the nose, fortunately at the end of its swing, but with sufficient force to knock him down. When our two friends had recovered, we turned our attention to the horse, which had not yet moved. "He is dead," cried a voice. We rolled him over nevertheless, whereupon he got up and seemed none the worse for his experience except for a more than usual stupidity.

Though our camp life was not so comfortable as further experience has shown to be possible in these

mountains, still there was the enthusiasm of early exploits and a certain romantic atmosphere to all we saw and did that perhaps lessens with riper experience. In the first place our surroundings would have appealed to any lover of nature. The upper part of this valley is hemmed in by an encircling line of mountains, and abruptly terminated to the south by a bare precipice which rises in a wedge-shaped peak called by us "Hungabee," or the chieftain. Falling away into a moderate depression, the cliffs rise again on the right into the lofty summit of Mt. Lefroy. A curious glacier, shaped like a horseshoe, lies at the base of this semicircle of mountains. The glacier ends in a high moraine ridge, and below this for a mile or more the valley abounds in delightful meadows and open groves, interrupted at frequent intervals by level tracts, pools of water, and quiet rivulets, or, where the country is more broken, by noisy glacial streams. The meadows were at the height of summer glory and bright with the scarlet painted-cup and red-purple epilobiums mingled in a wild clash of colours.

There are several species of epilobium in the mountains, of which the commonest is a tall plant with a long raceme of flowers. It is called the fireweed, for it appears most abundantly in the desolate wastes of burnt timber lands, where its bright flowers enliven the black and grey monotony of charred trees. In late summer it sends forth a multitude of cottony seeds, which are borne away through the

Camp in Paradise Valley.

air for miles, sometimes over high mountain ridges, to other valleys. There is a smaller and more beautiful plant of the same genus, which is only a few inches high and bears a few conspicuous flowers, magenta-purple coloured, that harmonise with nothing except perhaps the green of its own pointed leaves. It prefers the pebble-lined borders of mountain streams, or the dry bed of some old channel where a little gravel offers a foothold between water-worn stones, to the rich soil and verdure of meadows. This flower, like Grieg's music, recalls mountain pastures, and suggests in its discordant beauty of colour tones his wild, bitter-sweet harmonies.

The altitude of all the upper part of Paradise Valley is approximately seven thousand feet above sea-level, which, in this part of the Canadian Rockies, is the normal tree-line. The terms *tree-line* and *snow-line* are inexact, and vary greatly according to situation. In secluded valleys that face north, the upper limit of tree growth is sometimes below seven thousand feet. But where the valleys are broad and sun-exposed, spruces and larches grow as high as seventy-five hundred or even seventy-six hundred feet above sea-level.

All the valleys of these mountains are covered with heavy coniferous forests. There is a certain dignity in these tall, straight trees, which seems suitable to the cold northern wilderness, though the effect is monotonous as compared with the variety of tree forms found in the deciduous forests of the

Appalachians, the Green, and the White mountains. Only five kinds of trees compose by far the greater part of the forests in the summit range of the Canadian Rockies.

The white spruce (*Picea Engelmannii*) is found everywhere throughout the mountains from the lowest altitudes to the highest limits of tree growth. It is from forty to one hundred feet in height and from one to three feet or more in diameter. In heavy forests the outline of this tree is very narrow, as the higher branches, especially, project but a little way from the tapering stem. These lateral branches show a tendency to slope downwards, possibly the better to shed the burden of winter snow. In dark forests the lower branches die away and are often hung with black and gray beard-lichens. In places where the forests are somewhat open and protected from snow-slides, the spruce has live branches from the ground to the terminal bud, and the tree then assumes the form of a symmetrical spire. I counted four hundred rings in an old spruce stump near Lake Louise. This tree was less than three feet in diameter, but it sometimes exceeds four feet, and by the same ratio of growth such trees should be between five hundred and six hundred years old.

The balsam spruce (*Abies subalpina*) has about the same range as the white spruce, but is less common. At a distance it is hardly to be distinguished from the spruce, but the bark on branches and young trees is raised in blisters which contain a drop or two

of balsam. This balsam exudes from the bark wherever it is bruised. At first it is a very clear liquid, regarded by old trappers and woodsmen as a certain cure, when brewed with hot water, for colds and throat trouble. On exposure to air it slowly hardens into a brittle resin, which the woodsman melts into pitch to seal boxes or mend leaky canoes. The camper-out makes his bed from balsam boughs, as they are more springy and less rigid than those of the spruce. The blunt and soft leaves of the balsam are likewise much pleasanter to the touch than the sharp spruce needles.

There are two kinds of pine—the black pine (*Pinus Murrayana*), a small and slender tree which cannot endure very high altitudes, and the white-barked pine (*Pinus albicaulis*), which is found on rocky slopes at greater heights. The black pine extends over considerable areas, and alternates with spruce when fires destroy one or the other forest. The white-barked pine has an open branching trunk and is rather scarce in these mountains.

The most interesting and by far the most beautiful conifer is Lyall's larch (*Larix Lyallii*). It resembles the eastern tamarack, but is restricted to the summit range of the Rockies, and its southern limits, probably in Montana, have not yet been determined. I have never seen the larch in any of the Saskatchewan or Athabasca valleys, and the farthest north that I have observed it was on the slopes of Mt. Hector, eleven miles from Laggan. It rarely lives at altitudes

below six thousand feet above sea-level. The extreme range of altitude of this tree might be safely placed between 5600 and 7600 feet. Lyall's larch is very beautiful, having a rough, grey bark, irregular and heavy branches, and a foliage of soft needles arranged in tufts like green brushes. Its appearance among the spruces as you ascend is a certain indication that you are approaching tree-line, where it forms scattered groves on all the higher ridges and meadowy uplands. Its growth must be extremely slow, as I have counted thirty rings in a branch only three-fourths of an inch in diameter. The wood is hard and brittle, and after a heavy snowfall the branches often strew the ground in a painful ruin. Thus the tree has an irregular and gnarled appearance as a result of its ceaseless battle with snowstorms and gales. Probably no other tree in the world endures such stress of weather. Not till June or July does the snow entirely disappear from the ground in its usual habitat, and if the winter has been unusually severe the drifts may remain all summer. Its tender buds burst in June and the needles are fully developed in early July, but they are frequently covered with ice or snow during the summer, and in fact I have seen them covered with light snow in a freezing atmosphere for nearly three successive weeks in July and August. Then, no matter how hot the summer has been, the snow begins to fly again in September at these high altitudes, so that the larch has an active growing period of only

two or three months in the year. Nevertheless their trunks are frequently more than two feet in diameter, which seems to indicate that they attain a very great age in spite of the vicissitudes of climate. Those larches that grow at the highest altitudes have a curious development not found on trees a few hundred feet lower. The tufts of needles spring from a hollow woody sheath, which is sometimes more than an inch long on the high-altitude trees, while elsewhere this development is not present.

In October the larch needles fade, and during autumn mark a band of pale yellow on the mountains. The Lyall's larch is a constant source of delight to the mountaineer, and adds much beauty to those higher valleys and slopes where the deep forests end and the perpetual snows first appear. Its rough bark and crooked branches, adorned with a scanty foliage, make a light shade and show the blue sky beyond. In such places, contrasted with the cliffs and snow fields of the mountains, it lends a charm to their grandeur.

The Douglas fir (*Pseudotsuga Douglasii*) is the largest conifer of the eastern or summit range, but is only found on the foothills east of the mountains or in valleys which are less than five thousand feet above tide. Here it is found in company with the aspen poplar (*Populus tremuloides*), and the cottonwood (*P. balsamifera*), which when well seasoned makes the finest camp-fire possible and gives out no smoke or sparks whatsoever.

There was not much game around our camp in Paradise Valley, though we saw tracks of mountain goats while on our various excursions. There were, however, numerous small animals, one of which, a kind of rat with a bushy tail, tried to run off with various metal articles and did considerable damage during our absence from camp by gnawing our camera cases and leather straps. We frequently saw and heard the great hoary marmot, or whistling badger, which always remains at a safe distance, but startles the solitary wanderer by its sudden and exceedingly shrill whistle. Porcupines also lived in the open woods, one of which we killed and ate when we were hard up for provisions. They are hardly eatable, though the Indians regard them highly as an article of food. A most interesting little rodent is one that, at first, we called the seven-thousand-foot rat, because he invariably puts in an appearance at this altitude. This is the pica, or tailless hare, a squirrel-like animal, which infests dry meadows and the tumbled masses of rocks where slides have come down from the mountains. They have sufficient curiosity to make them narrowly watch your approach, till at length, overcome by fear, they dart away among the stones. The pica's only music is a dismal squeak, but they are so characteristic of upland parks and lonely though beautiful valleys, that the mountain climber comes to associate them with some of his finest experiences and so to love them.

Our chief adventures in Paradise Valley were the successful ascent of two unclimbed peaks, Mt. Aberdeen and Mt. Temple, an account of which will be given elsewhere. At the end of summer we had pretty well explored about fifty square miles around Lake Louise and were enabled to make a map of this beautiful region.

One by one the members of our party were compelled to bid farewell to the glories of the Rockies. I remained later to finish some details of survey work, and early in October made a final expedition with Mr. Astley to bring back our tent from Paradise Valley. A light snow covered the ground in protected places, and the large stream of Paradise Valley had fallen so much that its rocky bed proved the safest route for our pack-horse. On our way we saw a fine herd of mountain goats, a species of antelope like the chamois of Switzerland.

Our camp was buried in snow, the ridge-pole of the tent broken with the heavy burden, and everything so much changed in appearance that we had trouble at first in finding the place. The murky air was filled with falling snow as we rolled up the frozen canvas and blankets, while the mountains, half concealed by the approaching storm, showed vague outlines, and from the thickening gloom came the indefinite roar of distant snow-slides.

We reached the lower end of the valley by nightfall, where in this altitude a fine rain was sifting through the spruce needles, and here we made camp

in a dense forest. A crackling camp-fire, built of great logs, drove away the chill and dampness of a rainy night. The tent, our clothes, and the mossy ground were soon steaming, while the glare of our fire gave a cheerful light to the dark forest. Snow was falling in the morning, and squalls were sweeping through the valley and across the flanks of Mt. Temple, but three hours' travel through the cold swamps and snow-covered underbrush brought us to the chalet.

A few days later I climbed to Lake Agnes to hunt the mountain goats which frequent the place. The lake was nearly covered with ice, while the snow was already two feet deep, and I was compelled to seek shelter behind a cliff, for there was a driving wind, bitterly cold, and full of hail.

CHAPTER V

MT. ASSINIBOINE—OUTFITTING FOR A CAMPING TRIP—ANECDOTES ABOUT THE EARLY SURVEYORS—ROUTE TO ASSINIBOINE—A RAINY CAMP—DEEP SNOW ON THE SIMPSON PASS—WOODS OF THE SIMPSON VALLEY—DEATH OF A PACK-HORSE—END OF AN EXHAUSTING MARCH—FIRST VIEW OF ASSINIBOINE—A BURNT TIMBER CAMP—MUSIC OF THE WILDERNESS—IMPRESSIVE VIEW OF ASSINIBOINE—ENVIRONMENT OF OUR CAMP—A STRANGE LAKE—UNDERGROUND STREAMS—MEASUREMENT OF THE MOUNTAIN—WE COMMENCE A TOUR ROUND IT—DISCOVER A DEEP VALLEY AND THREE NEW LAKES—A WASTE OF FALLEN TIMBER—OUR FIRST BIVOUAC—ASCENT OF AN UNKNOWN STREAM—FOILED BY A CUL-DE-SAC—HOPE AND DESPAIR—SUCCESS AT LAST—DESCENT INTO THE NORTH FORK VALLEY—AN EXHAUSTING MARCH

ONE of the highest mountains of southern Canada is Mt. Assiniboine, which lies about twenty-five miles south of Banff. This remarkable peak attracted the surveyor's attention very early and its position was determined as a prominent landmark long before it was visited. Dr. Dawson saw it from the White Man's Pass and named it after a tribe of plains Indians. So far as I have been able to discover, the first person to reach

the base of the mountain was Mr. R. L. Barrett, who visited it with Tom Wilson in 1893.

The reputed interest of the mountain, and the surrounding region, which was said to be dotted with numerous lakes, made me decide to arrange for a visit during the summer of 1895. Fortunately it was the intention of Mr. Barrett, who was then at Banff, to revisit Assiniboine with his friend Mr. J. F. Porter, and upon comparing plans it was evident that mutual advantage would come from combining our forces. There were to be two separate parties, with men for each, travelling as one. Thus we were ready at any time, in the event of disagreement as to routes or plans, to separate and take our several ways.

The sixth of July was the date determined upon for our departure. In the meantime we made frequent trips to the log house of our outfitter, Tom Wilson, who was to supply us with pack-horses, guides, and our entire camping outfit. Many years previously Wilson had packed for the railroad surveyors and was regarded one of the best packers in the North-west. He has a remarkable memory for the details of any country that he has ever seen and is, moreover, peculiarly alive to special points of interest or attractive scenery in the mountains, a quality that is conspicuously absent in the majority of the people connected with the North-west.

July commenced rainy and cold, but our arrangements went forward without interruption. Wilson's

place was a scene of busy preparation during the last two or three days. Pack-saddles, piles of blankets, tents, and ropes were to be seen here and there, while bags of provisions and canned goods of all kinds were ready for final assortment. Rashers of bacon and bags of flour made the bulk of our provisions, while the smaller packages contained dried fruits of several varieties, cereals, sugar, tea, and coffee. Pots and pails, knives, forks, and spoons were collected in other places, while our men, who were already engaged for the trip, were bringing order from a chaos of articles, and making sure that the saddle-girths, head-ropes, and hobbles were in good condition, the axes sharp, and the rifles bright and clean.

"It is all very well," said Wilson one night after we had been talking over the possibilities of our trip, "to travel with maps, or a guide, and you will have no trouble, but I remember some strange things that have happened in these mountains. When the surveyors were searching for the best route across the Rockies, Major Rogers sent a party to explore the Kananaskis Pass. The man in charge of this party was to find, if possible, a way to the Columbia, but at the summit of the pass he came to a stream which flowed in a direction east of south. He retreated after he had followed the stream a short distance, as its course made him certain that he was still on the eastern slope of the range. But he was at the head of the Elk River, which flows into the Columbia by

way of the Kootenay, and so, without realising it, had crossed the divide.

"Major Rogers himself," Tom resumed, "was upon one occasion more completely turned round than that, trying to cross the Selkirk Range. He started up the Beaver River from the Columbia and, turning up Grizzly Creek, struck the headwaters of the Spilimichene, till at last he came out again on the Columbia, seventy miles from where he started in, and on the same side of the range."

Our route to Mt. Assiniboine lay through the Simpson Pass, and thence down the Simpson River to a certain place where an opening in the mountains to the south would lead us to this giant of the Rockies. Our journey began on the sixth of July, though the day was wet and showery. Our four men with nine horses started before noon for our first camp at Healy's Creek, about six miles from Banff. Barrett, Porter, and I came later, on foot, and after a mile or so of good road, plunged into the difficulties of a bad trail in a burnt timber country, and left the last sign of civilisation behind. In a drizzling rain we made our way over charred logs and through wet brush, hunting for the trail most of the time.

We came at length to Healy's Creek, a large stream that comes roaring out of the mountains from the west and drains the Simpson Pass to swell the Bow River. We shouted across and soon saw Peyto, one of our packers, coming at a gallop through the

brush. Chiniquay, an Indian cayuse which he rode, had to carry us one by one across the creek, which was rather deep and swift. The three tents of our camp had been prettily grouped under some spruces. Everything was in order and the cooks were preparing supper upon our arrival. We were labouring under many of those imaginary evils which by some are supposed to make camp life intolerable, soaked through by a long tramp in wet brush to reach a rainy camp. Nevertheless we were all happy, as our clothes were soon drying around open campfires, where a fine supper was served. Then we rolled up in blankets laid on balsam boughs and realised that, at last, our journey to Assiniboine was begun.

"Breakfast is ready," was the cheery shout that interrupted our dreams the next morning. The rising sun was struggling through uncertain bands of clouds and all the meadow flowers and grass were sparkling with pendent diamonds of rain and dew in the early light. Peyto and Edwards had long since driven our horses into camp and in an hour the men were busy packing. Our march commenced at eight o'clock, Peyto leading, the bay and Pinto — our best pack-horses — next, and then our several men interspersed among the animals in Indian file. We crossed a mile of flat country and, turning southwards, commenced to ascend among the high mountains.

The interest of our march was much increased by

the number of flowers that were to be seen as we went along. In damp, mossy woods we saw the round-leafed orchis, a very pretty plant with a single green leaf and a raceme of rose-purple flowers. It is quite common throughout the mountains. A rarer flower and one of exquisite beauty was also seen, the Calypso, a northern orchid named for the beautiful goddess who fell in love with Ulysses. The single blossoms are shaped somewhat like those of the species called lady's-slipper, and combine a showy display of pink, purple, and yellow colours. There is a small patch of green timber half a mile east of Laggan station where this flower may also be found, but it is very scarce elsewhere.

After a march of six hours we made camp in the deep valley of the north fork of Healy's Creek. While the men were putting things in order, it was discovered that Edwards's axe had been lost some time on the day's march. In view of the long journey before us and the possibility of considerable trail cutting, this axe was indispensable to our progress. He saddled his horse and started back, saying that he would not return till it had been found. Contrary to our expectations, he did not return that day nor for a period of nearly two weeks.

Our camp was only a few miles from the Simpson Pass, and the next day we reached it in an hour. The summit was covered with snow, and many of the drifts were fifteen or twenty feet deep. The altitude of this pass is 6884 feet, and the entire summit

and the mountains several hundred feet higher are covered with trees. The unusual amount of snow in July was the result of a long and stormy winter followed by a backward spring. The day of our visit was warm, and the snow was being fast reduced to slush, under the influence of a mild south wind. The pass has no decided slope for a mile or more, but is broken up by rocky ridges and interspersed with small lakes. When our descent began, the first warm southward slopes were already free of snow and covered with banks of beautiful Alpine flowers. There were only two or three species in these snow-lined flower-gardens, but the multitude of blossoms made up for the lack of variety. The great white anemone and the yellow Alpine lily (*Erythronium grandiflorum*) were in all stages of bud and blossom, revelling in the balmy breezes and a wealth of sunshine. Our heavy-footed horses trampled down myriads of blossoms in a ruthless destruction, regardless of the beauty round them, but glad to get into a place where there was hope of grass. We had crossed the great divide and passed from Alberta to British Columbia. An Indian trail led us down by a stream which, at first a mere rivulet from melting snow, had now become a brawling torrent. This stream ran into the Pacific Ocean.

The woods became deep and dark with sombre trees of great height, among which the trail wound deep cut in the loamy soil, and led us at length away from the noise of falling water into the forest

silence. The day's march ended at the Simpson River, where we camped in a level place beside many Indian teepee-poles.

July 9th. The entire Simpson valley in this part is an unbroken forest. Several thousand feet higher, bare limestone cliffs rise above the mass of green, making a picturesque contrast, but there is little perpetual snow in sight from the depths of the valley bottom. Our line of march lay near the Simpson River, which is a very rapid stream, and we followed its banks for several hours. During one of several river crossings one of my pack-horses was lamed in a mysterious manner, but no attention was at first paid to what seemed a trivial accident. However, in a few minutes we made a final crossing before we should ascend the opposite mountain side to a distant valley opening. Barrett said this was the route he had followed with Wilson in 1893. The stream had been safely crossed, and we were trying a short cut to the trail which Peyto had located just previously on a trip of reconnaissance, and while floundering through a soft, mossy wood, the horse recently lamed fell in a rough place. The poor beast could not get up till his packs were removed, and then it was seen that his leg was broken. It required but a few minutes to remove his saddle, and then, after the other horses were led away a short distance, Peyto ended the unfortunate animal's life with a rifle bullet.

Barrett said it was not far to a pretty lake where

there was an excellent camping place and good feed for the horses. Leaving the river at an altitude of about forty-five hundred feet, the trail ascended by a succession of steep pitches through a green forest of pine and spruce. After we had been on the march for six hours we found ourselves entering a high valley much encumbered by rock-slides which, though easy enough for us to walk over, were very trying and dangerous to the horses. It was impossible to camp in this vicinity, and after an exhausting march of three hours more and an ascent of fully two thousand feet from the Simpson River, we made camp in a delightful place near a stream. Some bushy meadows promised fine feed for our horses and the adjacent woods gave us fire-wood. Even our weary pack animals when their saddles were removed rolled on the ground in delight and scratched their backs before running off to the meadow. Axes were at work cutting fire-wood and poles, so that in the hour while our cooks were preparing dinner the three tents were placed in position and camp put in order for the night.

Our valley was hemmed in by mountains which presented a continuous barrier on either side for many miles. The scenery resembled that of the Sierra Nevadas — smooth cliffs dotted here and there with trees or clumps of bushes, and ornamented by waterfalls so high, and so distant from us, that they resembled silver threads waving from side to side in the changing breezes. Sometimes a stronger wind

held them suspended for a time in mid-air, or swept them away altogether in a cloud of spray.

Opposite our camp, and at a considerable height above it, there was a formation upon the mountain like a rock fortress, where nature had built a nearly perfect representation of a mediæval castle. One might easily imagine that these sharp pinnacles and rocky clefts were ramparts, embrasures, and turreted fortifications. But the wild goats, marmots, and picas were the sole owners of this castle.

July 10th. From a small lake near our camp we caught a dozen trout in the morning while our men were coming up the valley. It appeared that a few miles would bring us to the valley's end, where a high pass seemed to terminate the ascent. Filled with hope of getting our first view of Mt. Assiniboine during the day, we were on the march at an early hour. Lyall's larch and scattered snow-drifts indicated our increasing altitude. The snow soon became so deep that only with the greatest difficulty could we make any progress whatsoever. On several occasions our horses had to struggle through long stretches of snow, five or six feet deep, and in such places we all went ahead and trampled out a pathway for them. Finally a long bare ridge, well exposed to wind and sun, offered us a fine route through the unbroken snow fields and led us to the summit.

As the slope began to fall away in the opposite direction a new world lay before us. It was a desolate valley of burnt timber, beyond which appeared

a richly coloured lake, girt by green forest and overhung by a barrier of snowy peaks. Above this rough range, the sharp crest of Mt. Assiniboine was faintly seen through the smoky atmosphere, for forest fires were raging somewhere in spite of the rainy season. We descended into the valley and camped in burnt timber near a small stream.

That our men and horses might rest after the long marches of the last four days it was decided to spend an entire day at this place. There was little of the picturesque in our environment of burnt timber. However, this camp has for some reason made one of the pleasantest impressions upon my memory.

Our tents were placed among some trees killed by fire. The ground was made comparatively smooth by rolling away the charred logs, cutting the bushes that had grown up in recent years, and strewing upon the ground branches from trees of the new generation. In a swamp near us a number of birds were nesting and calling their mates. The camp was upon the edge of a bluff overlooking a bare ravine, where a stream ran swiftly in a timber-choked channel, and gave the encroaching bushes endless rhythmic movements, as the splashing water touched them. A gentle south wind coming up the valley soothed us to dreamy slumbers. The stronger gusts awakened shrill vibrations in the dead and splintered trees, or carried away the torrent's roar in frequent alternation of sound volume. The smoke

bathed the mountains in hazy blue, and once, coming in greater thickness, nearly concealed them altogether and softened the sunlight to a mellow glow.

The thunder of repeated ice avalanches, or the loud reports of stones falling upon the mountains, where summer was loosening the frost, several times disturbed my siesta. The dreamy rustle of wind-blown grass and the varying sound of the torrent were, however, like an endless slumber song. From a bushy copse in the swamp near our camp two white-crested sparrows sang the entire day and part of the night a plaintive little air of five notes (C, D, E, E, C, of which the two E's are eighth notes, while the rest are quarters) repeated six or seven times a minute. The last note is somewhat faint and flat. This feeble and pathetic outpouring of music from happy creatures seemed to accord with the barren forest ruin. It is difficult to understand the exquisite pleasure that often comes from such chance associations. There is something wonderfully beautiful in the idea of a pretty melody repeated throughout the long summer in the heart of a wilderness where, in the waste of charred trees and waving fireweed, the music of one little bird stirs the heart-beats of but one other creature, its mate.

July 12th. We marched east for two hours, finding a route among the fallen timber as well as we could. At length a steep ascent brought us by a waterfall to a grove of larches beyond which a beautiful lake appeared. The transformation from the

waste of burnt timber was immediate and complete. A well-marked trail led around the winding shore on our left, the other side of the narrow lake being hemmed in by rock-slides and cliffs. The last ice of winter was drifting before the wind, and the water was covered in several places with a kind of slush, made of innumerable slender ice-needles. These gave a faint sound like the rustle of silk as they rubbed one against another in the ripples. The trail led us by the lake for half a mile and then, leaving it, ascended a rocky ridge through a grass-lined opening. Another lake was immediately disclosed, and beyond it mighty Assiniboine.

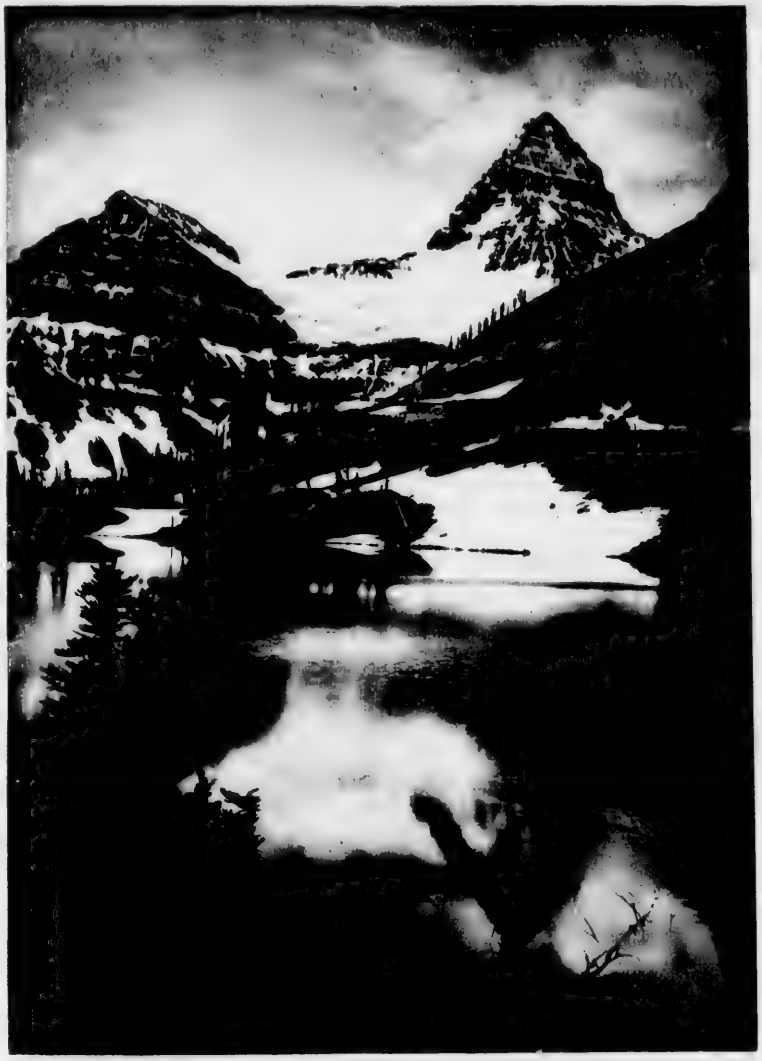
The majestic mountain, which is a noble pyramid of rock towering above snow fields, was clearly reflected in the water surface. Such a picture so suddenly revealed aroused the utmost enthusiasm of all our party, and unconsciously everyone paused in admiration while our horses strayed from the trail to graze. Continuing once more, we traversed some open places among low ridges covered with beautiful larches. We passed through a delightful region which descended gently for half a mile to a treeless moor, where we pitched camp. Behind us was a clump of trees, before us Mt. Assiniboine, and on our left a lake of considerable size, which washed the very base of the mountain and extended northwards in the bottom of a broad valley.

We remained here for a period of two weeks. The altitude of this place is seventy-four hundred feet.

This is considerably above the usual tree-line of these mountains, though there were a considerable number of spruces and larches not only at the level of our camp but several hundred feet higher. I attribute this to the open character of the valley, which receives a considerable amount of sunshine, and so collects sufficient heat to raise the level of possible tree growth above the normal. Mt. Assiniboine was almost due south from our camp. The distance in a straight line was more than a mile to its base and nearly three to its summit. Two diverging spurs from Assiniboine enclose this valley. To the north it expands into open places, interrupted in part by scattered tree clumps, but covered generally with a low, bushy growth. The smaller trees which grow in the open are dwarfed and distorted by their ceaseless struggle with cold. Even at the borders of thick groves the spruces often show a regular line of branches, like a trimmed hedge, as though no single branchlet would venture into the cold air beyond its company.

The higher dry ground is uneven and hummocky from the burrowings of innumerable picas and marmots. These are a variety of Parry's marmot, sometimes called the red-bellied ground squirrel, which is considerably smaller than the siffleur, or great hoary marmot, so common in these mountains. The wolverenes have dug into their burrows and by throwing out piles of dirt and great pieces of turf have added to the roughness of the region. In the meadowy

Mount Assiniboine.



and swampy places where our horses pastured, two miles north of camp, some curious action of frost has converted the ground into a mass of low grass-crowned hummocks with bare soil between. Altogether I have never seen a region which is more tiring to the pedestrian than this, because of these endless inequalities of the ground, which are half concealed by dwarfed trees and a tough underbrush.

The large lake near the position of our camp has some peculiar features. At the time of our arrival a strong wind was driving cakes of ice down the lake amid whitecaps. The lake seems to rest against a small glacier at the foot of Mt. Assiniboine where it gets a large part of its water-supply. A large stream enters it at the opposite or north end, and several others come in at various points, but we were surprised to find no outlet. This, however, explained the rapid change in water level which we had noticed. The lake was rising at the rate of several inches every twenty-four hours. There were indications on the shore that the water had at some comparatively recent period been ten or twelve feet higher. Where do the subterranean waters escape? Perhaps the curious nature of a valley north of our camp may throw some light upon this subject.

Peyto had put our horses in a meadow two miles from camp. He made frequent visits to the place while looking after the horses, and upon one occasion made a trip of six or seven miles down the valley. The streams from these meadows run north-

wards, disappear into the ground, reappear several times, and finally vanish altogether. In this valley a mile or so farther on is a curious lake set in a limestone basin. One or two small streams enter it, and a number of air bubbles rising through its clear water in several places indicate subterranean springs, but there is no outlet. Then for three miles no stream or sign of water is visible in this weird valley of curious limestone hills covered with a few trees. At the base of a great hill, however, where the valley bottom drops suddenly six or seven hundred feet, a number of springs gush out, and this we discovered later was the source of the Simpson River. Everything seems to show that the waters of the last lake, the meadows beyond, and perhaps also the large lake at the base of Mt. Assiniboine are carried in underground passages to make these springs. The whole region is a limestone formation and abounds in caves and sink-holes.

It has been mentioned that on the second day's march one of our packers, Edwards, had gone back to find a lost axe. At every subsequent camp, therefore, we had left a supply of provisions and information about the route we were going to pursue. More than ten days had now elapsed and nothing had been heard from him. Peyto's fertile imagination conjured up visions of his having been drowned in Healy's Creek, and I must confess that we were all somewhat worried. It seemed best to send Peyto back on a fast saddle-horse, to make inquiries at

Banff, and improve the opportunity of bringing out another horse to replace the one that had been shot. Meanwhile, as Mt. Assiniboine seemed a serious problem for even a well-equipped Alpine party, we made no attempt to climb the mountain. We contented ourselves with a number of lesser mountain ascents, and from several points between eight thousand and nine thousand feet high obtained splendid views of the giant of the Rockies.

There were, unfortunately, no surveying instruments in our outfit, but I determined to get a rough approximation on the height of Assiniboine. I used my camera tripod for a plane table and made a little alidade by adjusting two upright sticks to another with a straight edge. The upright sticks were threaded with horse-hairs. Taking a piece of linen thread about fifteen yards long I set up stakes and laid out a base line. This thread was carefully measured when I reached Banff. With these crude instruments I plotted out and found the horizontal distance to the top of the mountain, and repeated the operation several times. For the vertical angles I set up a table and a basin of water. I had a large piece of celluloid as a substitute ground glass for my camera, and on this a straight line was ruled and made to coincide with the water surface. Then two needles were used as sights, and the vertical angle to the mountain top was indelibly scratched on the celluloid and measured later. By adding the result thus determined to the altitude of our camp, I got

11,680 feet for the total height of Mt. Assiniboine. The result obtained by the Topographical Survey of Canada from angles taken at a distance is 11,830 feet. This, no doubt, is very nearly the exact height, and the comparative agreement of my result is probably due to several errors cancelling themselves out and so giving a better result than the instruments deserved.

One day, about a week after leaving us, Peyto galloped into camp with another horse, some additional provisions and our guide Edwards. The latter said he had followed us for four days' march, when he lost our trail and returned to Banff.

Shortly after Peyto's arrival, Barrett and I projected a plan to see the south side of Mt. Assiniboine. As the country was very rough, it was impossible to make the trip with horses, so we prepared to try it on foot. We were going into a country that in all probability had never been visited by any white man. We each carried a single blanket and food enough to last three days. These burdens were made as light as possible, for the success of our expedition would depend in a large measure on the rapidity of our movements. My camera, several cups and knives, a small hand-axe, and a few other articles which seemed absolutely necessary were distributed among our packs.

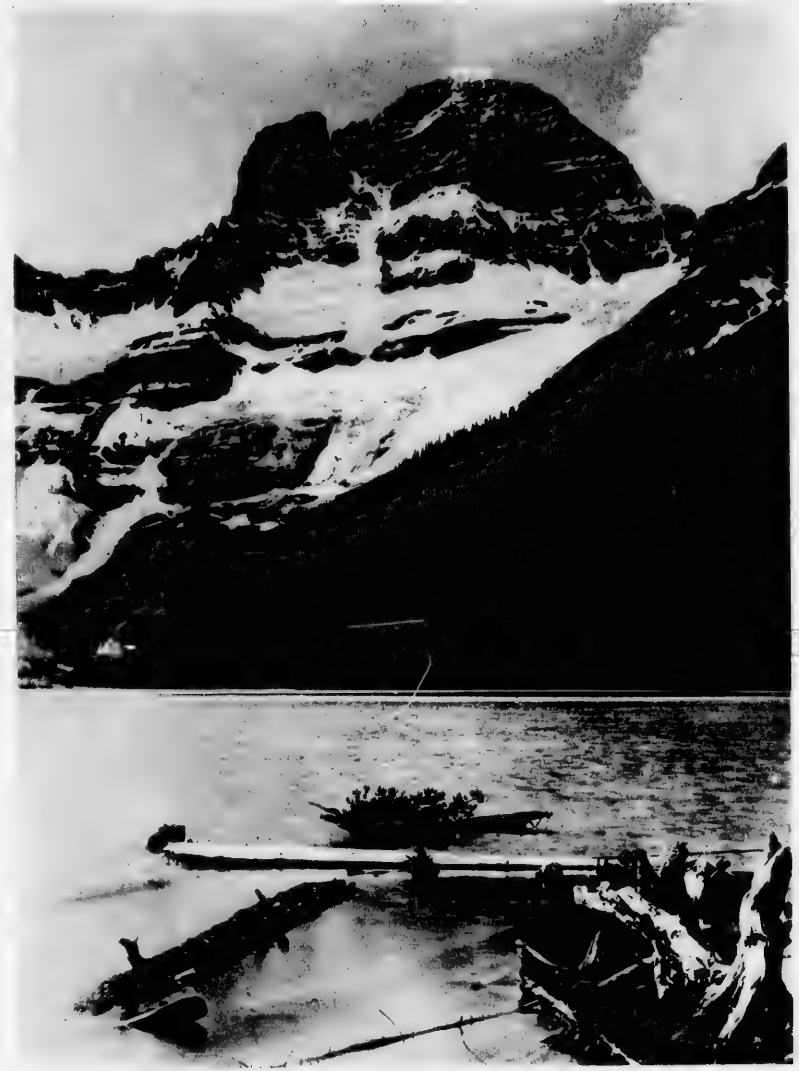
On the 26th of July, Barrett, Peyto, and I started on this expedition, which, though attended by considerable hardship, eventually proved most valuable

and interesting. At eight o'clock we bade farewell to those at the main camp and said we should return on the third or fourth day. We walked three miles to the north-east, through open country, which rises gradually to a pass eight thousand feet above sea-level. On the summit of this a deep valley lay before us, very heavily wooded and nearly filled by three lakes, one of which is three or four miles long, while the two upper ones are smaller. The water of each is differently coloured, one yellowish green, another blue-green, and the other blue. All are fed by a stream coming from a glacier on Mt. Assiniboine which presently appeared on our right.

We descended two thousand feet into the valley and took a short rest by the blue waters of the middle lake. The air was oppressively hot and we struggled amid the pitfalls of very large timber, making slow progress and tormented by myriads of mosquitoes. We crossed this narrow valley between the two upper lakes and found a fallen tree that served for a bridge over the stream. Then ensued a difficult scramble up the opposite side of the valley, which made us climb again nearly the entire two thousand feet of our first descent. This hard work ended suddenly when we found ourselves in a comparatively level valley, beautified by meandering streams, open meadows, and a few small lakes. On the summit of a pass where the water turned in the opposite direction we ate lunch and took an hour of rest beside a rock-girt pool.

This was the end both of the green timber and of our pleasant surroundings, for shortly after resuming our journey we came to a burnt forest. It seemed that the entire valley had been utterly devastated by a fire which had swept through this region apparently not many years before. Many of the trees had been completely destroyed, while the youngest had been charred and warped into arched poles with their tops touching the ground. Ledges of sandstone and quartz had been splintered by the intense heat into sharp-edged fragments which covered the ground. The direction of this desolate valley soon changed sharply to our right and we felt that a corner of Assiniboine had been turned. There was no sign of any trail and it is very doubtful if the Indians ever used this route among the mountains. The fallen timber became denser as we progressed. The monotony of our travel was interrupted by our coming to a sudden pitch or descent of the entire valley where there was an abrupt fall of about five hundred feet. Arrived at the bottom of this, we had not walked far before another appeared, similar to the first, only far deeper. The mountains, which were very high on either side, seemed to rise above us to far greater altitudes as, in rapid descent, we reached lower levels.

The burnt timber continued without interruption. Our passage became mere log walking, as the extra exertion of jumping over the trees was worse than following a crooked course on top of the prostrate trunks. This laborious and exceedingly tiresome



MT. ASSINIBOINE FROM THE EAST

work lasted for three hours, and at length the charred trunks, uprooted or burnt off near the ground, and crossed in every direction, were piled so high that we were often ten or twelve feet above the ground, and had to work out our puzzling passage with considerable forethought. At five o'clock our labours ended. We made camp by a stream which seemed to take its source near Mt. Assiniboine. The only good thing about this place was the abundance of fire-wood, which was well seasoned, required but little chopping, and was already half converted into charcoal. Under the shelter of an overhanging limestone ledge we made three lean-tos by supporting our blankets on upright stakes. Black as coal-heavers from our long walk in the burnt timber, seeking a refuge in the rocky ledges of the mountains, and clad in uncouth garments torn and discoloured, we must have resembled the aboriginal savages of this wild region. Some thick masses of sphagnum moss, long since dried up, gave us a soft covering, to place on the rough, rocky ground. Our supper consisted of bacon, hardtack, and tea. Large flat stones placed on a gentle charcoal fire served to broil our bacon quite successfully, though the heat soon cracked the stones in pieces.

We were now on the Pacific slope and, as we believed, on one of the tributaries of the north fork of the Cross River, which flows into the Kootenay. The aneroid indicated that our altitude was only forty-seven hundred feet above the sea, and showed that

we were nearly three thousand feet below the level of the camp we had left nine hours before. At eight o'clock, though it was still light, we retired to the rough protection of our shelter with a fire burning near us. Overhead the starless sky threatened rain, which fortunately did not come, while the clouds and our lower altitude made the night comfortably warm.

On the following day everyone was ready to proceed at an early hour. Hitherto in our journey around Assiniboine we had turned to the right wherever any valley or pass gave us the opportunity. Thus we were making a circuit of its several spurs and keeping as near the great mountain as possible. However, no view had been obtained of the main peak after leaving the valley of the three lakes, where we looked upon its north-east face. This first bivouac was beside a stream of moderate size, coming out of a valley at right angles to the one we had recently followed. It seemed altogether better to explore this, that we might keep as near as possible to Assiniboine and not find our view cut off by any intervening mountain range. With practice a very fair idea of the length of these mountain valleys may be had by observing the size of streams and the amount of water they carry. This one seemed to indicate a valley between eight and ten miles in length.

We were on the march about seven o'clock and began to ascend the stream. Our plan was to follow

the valley as far as practicable and see what would develop, but beyond that everything was indefinite. Clouds covered the entire sky and touched the mountain tops, but the worst sign of bad weather was that they constantly settled to lower levels. We had this one day, however, to see the south side of Assiniboine, and were resolved to take our chances, though they seemed much against us.

We traversed the unending burnt timber by first scaling far up to avoid a canyon and then coming down to the stream, where at length there was better walking. About ten o'clock we sat down on the bank to rest a few moments and to eat a lunch of hardtack and cold bacon. In the fresh mountain air even this rough fare was most appetising after our tramp of three hours amongst fallen trees.

A most encouraging change of weather now took place, for a sudden gleam of sunlight called our attention upwards, where to our great relief blue sky appeared and the clouds seemed to be dissolving away.

Once more taking up our various packs, we pushed on with renewed energy. On the left or south, was a long and lofty ridge of nearly uniform height, on the right a stupendous mountain wall of great height, the top of which was concealed by the clouds. This impassable barrier seemed to curve around at the head of the valley, and, turning to the south, join the ridge on the opposite side. This then was a *cul-de-sac*, or "blind" valley without an outlet.

There were two courses open to us. The first was to wait a few hours, hoping to see Mt. Assiniboine, and return to camp the way we came. The second was to force a passage, if possible, over the mountain ridge to the south and so descend into the North Fork valley, which we were certain lay on the other side. The latter plan was preferable, as we would have a better chance to see Mt. Assiniboine, and the possibility of returning to camp by a new route. After a short discussion, we selected a favourable slope and began to ascend the mountain ridge. In memory a great number of obstacles loomed behind us — two high passes, dense forests, and that endless valley of dead timber where the trees were crossed in bewildering confusion. Hope built a pleasing air-castle in striking contrast to this picture. We were now climbing to its outworks and, should we succeed in capturing the place, a new and probably interesting route would lead us back to camp — so extravagant is hope — perhaps by nightfall. Thus with a repellent force behind us and eager desire to complete our circuit of the mountain, we were resolved not to retrace our steps.

The slope we were now ascending was at first comparatively gentle. We passed several red-coloured ledges containing deposits of iron ore, while calcite and carbonate of iron were visible everywhere and made a brilliant surface of sparkling crystals over the dull limestones. In the valley below, two lakes appeared as we ascended, one of which was

literally covered with floating trees, the result, no doubt, of a winter snow-slide.

In an hour we had come to the apparent top of our ridge, though hope hardly dared suggest that it was the true summit. As one after another we reached a commanding spot, a blank look of despair stole over the face of each. No word was spoken, but that silent gaze meant our defeat. To our dismay, a vertical wall of rock appeared and rose five hundred feet above us. Thus all our fond hopes were suddenly defeated and we turned perforce, in imagination, to a weary retreat over the many miles of prostrate tree trunks that intervened between us and our camp.

The main object of our long journey was, however, at this time attained, for the clouds lifted and revealed the south side of Mt. Assiniboine, a sight that probably no other white men have ever seen. I took my camera and descended on a rocky ridge for some distance in order to get a photograph. Returning to where my friends were resting, I felt the first sensation of dizziness and weakness, resulting from unusual physical exertion and a meagre diet. I joined the others in another repast of raisins and hardtack, taken from our rapidly diminishing store of provisions.

Some more propitious divinity must have been guiding our affairs at this time, for while we were despondent at our defeat, and engaged in discussing the most extravagant routes up an inaccessible cliff,

our eyes fell on a well-defined goat trail leading along the mountain side on our left. It offered a chance which we accepted. Peyto set off ahead while we were packing up our burdens. Having already passed several places that appeared very dangerous, what was our surprise to see him now begin to move slowly up a slope of snow that appeared nearly vertical. We argued that if he could go up such a place as that, he could go anywhere, and that where he went we could follow. We hurried after him and found the goat trail wide and the worst places not so bad as they seemed from below. The snow ascent was very steep but safe enough, and after reaching the top, the goat trail led us on, like a faithful guide, showing us the way. We could see only a short distance ahead because of numerous ridges and gullies. Below us was a steep slope roughened by projecting crags, while, as we passed along, showers of loose stones rolled down the mountain side and made an infernal clatter, ever reminding us not to slip. At one o'clock we stood on the top f the ridge nine thousand feet above sea-level, having ascended forty-three hundred feet from our last camp.

The valley of the north fork of the Cross River lay far below, covered with green forests, which gave a pleasant invitation for us to descend. Galloping down a long slope of loose scree, with a shower of rocks following us, we came to rough limestone gullies where unstable footholds suggested caution. Then ensued several hundred feet of bare rock-slides,

SOUTH SIDE OF MT. ASSINIBOINE

where among the lichen-covered stones the highest Alpine flowers appeared, and then very soon tufts of grass and green slopes, with a few dwarfed trees. Their increasing size, the warm air, and at length a deep forest indicated our rapid descent. A final slope, where copses of birch and a few small maples showed that we were on the Pacific side of the range, led us through a garden of bluebells, asters, and painted-cup to a meadow by the river. Here we paused to admire our surroundings and feast on wild strawberries. In this place we were four thousand feet below the ridge from which we had recently gazed on Mt. Assiniboine.

This was the north fork of the Cross River, no doubt the same stream by which we had camped on our journey to Assiniboine, and the same that takes its source in small lakes near our camp.

Near the river we found a trail, the first we had seen so far on our way around Assiniboine. After an hour of walking we came [illegible] a number of horses, and soon saw on the other side of the river a camp of another party of gentlemen, Messrs. Allen and Smith, who were exploring this region, and had been out from Banff twenty-four days. We forded the river, and found it a little over our knees, but very swift.

A pleasant half-hour was spent at this place while we enjoyed their hospitality and related our adventures. Then, "hitting the trail" once more, we walked rapidly in a supreme effort to reach camp

that night. The valley held a straight course for about six miles and then swung round to the north. We had turned three corners of Assiniboine. Burnt timber now came again in evidence. As we had been walking almost continuously for the past fifteen hours, we were so fatigued that a very slight obstruction was sufficient to cause a fall, and every few minutes some one of the party would tumble headlong into the burnt timber. We were too tired to lift our feet over roots and sticks, but there were barely enough provisions to last another meal and we were anxious to get as near headquarters as possible. At ten o'clock the light in the northern sky failed us, and further progress being impossible, we selected a fairly level place among the charred logs for a bivouac. After a last meal of bacon and hardtack, we lay on the ground round a large fire. Thanks to a mild night and extreme weariness, we slept soundly during the few hours of darkness, but were again on foot at four o'clock. We marched into camp at half-past six and found the cooks building the morning fires and ready to prepare breakfast.

This was without doubt the first circuit of Mt. Assiniboine. By pedometer, which, however, measured every one of the countless logs we had jumped and a thousand devious turns, the distance was fifty-one miles, and this we had done in less than forty-eight hours.

After a day of needed rest, our winding train of horses left the beautiful site of Mt. Assiniboine to

commence our homeward journey, and there were many unexpressed feelings of regret at saying farewell to these scenes of beauty and grandeur. We followed the Simpson to the Vermilion River and the latter to the Vermilion Pass, and after seven days reached the Bow River at Castle Mountain.

CHAPTER VI

ANOTHER ROUTE TO ASSINIBOINE — MEADOWS ON THE CONTINENTAL DIVIDE — A MIDSUMMER SNOW-STORM — A MARCH THROUGH FOG AND SNOW — A VISION OF STRANGE MOUNTAINS — A PERILOUS DESCENT — VALLEY OF THE GNOMES — A TREMENDOUS LANDSLIDE — SECOND CAMP AT ASSINIBOINE — A PARTIAL ASCENT — GENERAL FORM OF THE MOUNTAIN — FOUR DIFFERENT ROUTES TO THIS REGION

IN the summer of 1899 I made another visit to Assiniboine. Messrs. Henry G. Bryant and Louis J. Steele were anxious to see this noble peak, and for my own part, the exploration of new routes to and from the mountain was a sufficient incentive to make the trip. It was first proposed to take a Swiss guide and make some attempt to climb Assiniboine, but we were unable to obtain the services of one for such a length of time as our journey would require. Nevertheless, we carried in our outfit some rope and three ice-axes, with the idea of making at least a reconnaissance of its lower slopes under our own guidance. Wilson suggested a shorter route than by the Simpson Pass, one that should follow a branch of Healy's Creek and lead to

the summit of the continental divide, where there is a level and open expanse above tree-line. On these elevated meadows, it is possible for horses to travel with ease in any direction.

On July 23rd, about noon of the second day out from Banff, our party might have been seen on an Indian trail that runs through a dark forest, overlooking a narrow valley, and commands, through the trees, inspiring views of the height and depth of mountain grandeur. The trail led persistently upward, sometimes in pitches so steep as to worry our heavily burdened horses, till at length the larches began to appear, and gave a sure sign that open country was near. Presently the slope became gentle. Marching through open meadows and between larch-crowned ridges, we soon entered a delightful upland. We could see the peaks of distant mountains rising above the open country, while all the low regions were hidden from view. An excellent trail (as is always the case when there is no urgent need for one) led us gradually above the region of larches till we were surrounded by banks of Alpine flowers, and snow-drifts lingering from a stormy winter. Far to the south a sharp mountain of striking outline rose above the meadowy expanse. It was Mt. Assiniboine.

We made camp by a small lake which was dotted with several rocky islands and enclosed by stern cliffs where a few half-dead larches were standing, or their ancient hulks, bare of bark and bleached

by the exposure of centuries, covered the ground. Bryant, who was familiar with the interior of Labrador and Greenland, said the place recalled those barren regions. The day of our arrival was one of brilliant sunshine, while great cumulus clouds were suspended in the blue vault above. The green meadows and rolling hills from which we seemed to command a view of the entire world were veritable gardens of wild-flowers growing near drifts which nearly gave us snow-blindness. Summer was just coming to this upper world, and all nature was alive. Springs and streams were carrying away the snow-drifts and turning to snow-white foam again, as they fell over ledges to lower levels and other meadows. Butterflies floated across our paths, flies and bees were gathering honey from the flowers to scatter unconsciously the pollen of the anemones and the heaths, while even a few birds visited this high region to prey upon the innumerable insects which were enjoying their brief summer.

Brief indeed it was, or at least interrupted for a time. Clouds gathered in the night, and the next morning a cold rain was falling and soon turned to snow. The upper hills began to whiten, and presently, the snow remained upon the ground near our upland camp. The storm increased and shrouded the nearer hills in gloom, shutting out our landmarks, for we were to travel that day in spite of the weather. It was cold and cheerless work for our men and us to roll up our wet and slushy tents and

ON THE CONTINENTAL DIVIDE

keep our blankets dry while the shivering horses were packed. Some were refractory and wild, so that an hour was wasted in patient and artful effort in the wet brush to catch two of them. A large fire was kept blazing to bring back life and warmth to our half-frozen fingers. We should never have undertaken a march through a country unknown to every one of the party, had we not carried an excellent contour map of the Topographical Survey, besides a compass and an aneroid. We were like a mariner with an excellent chart, steering his storm-beaten ship through unknown dangers.

At the very commencement of our march, all spread out and tried to locate the trail, but the snow was now deep enough to conceal every evidence of this valuable guide. Regardless of this setback, our horses were assembled and a plan made to pursue our way, relying on the compass and aneroid. It fell upon me to take the responsibility of leadership, so with map in hand, I preceded at some distance and on foot, so that whenever a mistake was made I could run back and direct the men and horses elsewhere. Our route, according to the map, lay for several miles through an undulating country, which was, in fact, the very backbone of the continent. On one side was the deep valley of the Simpson, three thousand feet below, and on the other side, the streams which unite into Healy's Creek. It soon appeared that with every mountain concealed from view, and every high hill, even to the narrow circle

of snow-covered ground near us, shrouded in mist and flying snow, the task of keeping a certain direction through the maze of ridges and impassable snow-drifts was not easy. Several times we found ourselves on the crest of a precipice, overlooking the blackness of unknown depths, or, still more disheartening, near a lake or a stream that looked remarkably like what we had passed long before. Crossing many ridges of moderate height, we were often caught between deep snow-drifts, when a retreat was necessary, or sometimes a perilous passage over the snow was tried, but fortunately these great snow-banks were hard in the middle and bore our horses up, though they usually broke through at the edges where the snow was only three or four feet in depth. Thus we marched, closely surrounded on every side by a thick and impenetrable gloom, in which various forms of strange hills and cliffs continuously loomed before us, passed by, and disappeared.

At length, according to our map, we should come to a ridge or pass about 7800 feet in height, where certain landmarks, one of which was a small lake, would appear if we were right in our calculations. Hitherto the rolling nature of the country gave no certain clue, nor offered determinate landmarks, while our altitude was nearly uniform. Owing to countless reverses and delays, we might have been now quite turned round. It was therefore with the greatest interest that we found ourselves ascending to the crest of a ridge, seemingly like one shown on

the map, for the whole question would be settled upon looking into the basin beyond.

Whatever interest there may have been to learn our whereabouts was absorbed upon reaching the ridge crest by a revelation of wild and gloomy grandeur that I have never seen equalled. Our little band of men and horses were standing upon a craggy ledge, where splintered rocks, frost-rent and rough, rose through perpetual snows, making a tower of observation, whence we looked out on a mountain wilderness. Shifting winds were sweeping fog-banks and clouds far above the highest trees of a forest-clad valley, now faintly discernible through the storm. Yet they were below the crest of our lofty pinnacle, where our storm-beaten band of horses, steaming in moisture, stood darkly outlined against the pale mists. No gleam of light broke through the lurid sky. The monotonous grey of falling snow had given place to heaving bands of clouds, for the storm was breaking. Then slowly and mysteriously beyond a dark abyss rose a beautiful vision of mountains clad in new snow. Their bases rested on unsubstantial fog, their tops were partially concealed by clinging mists, and they were apparently so far away as to seem like the highest mountains in the world.

Overawed by these wonders of the breaking storm, the nature of the immediate country was, for a moment, forgotten. Then we formed a group around the map, its folds now broken, and the paper

a mass of pulp from melted snow, and with compass upon it, we hoped to prove that so far no mistake had been made. Some of the ridges appeared as they should, according to the map, but a certain lake was missing. We knew about where it should be, but unfortunately no lake appeared. Descending a short distance to command a better view, I saw a lake and shouted back the glad tidings. Bryant and Steele said it was a lake too, but they did it so as not to hurt my feelings. I had been working pretty hard for the success of the day's march, and they wished to encourage me. What a lake that was, to be sure! It seemed about ten feet across. Two hot days might dry it away, or a bunch of ponies could easily drink it up. So we had made a huge blunder, and it was best to go down to the woods and strike camp till another day. A last despairing effort led me to reconnoitre several hundred feet below, when I came to an overhanging ledge, and with wild joy beheld a fine little lake, nestling dark and blue on the whitened mountain side.

Rapidly descending, our route lay along the shore of the coveted lake, which was located at the level of tree-line and was surrounded by the highest skirmishers of the forest. Thence we marched through long, rolling meadows, in gentle descent to places quite free of snow. Here the trail appeared, and led us for miles along the very crest of the continent, by other lakes and streams, some flowing to our right into the Pacific, others, to our left, into the Atlantic.

Here each swamp and ridge marked the sinuous border line between East and West; between two oceans; between British Columbia and the Northwest Territory.

The storm was rapidly breaking. Distant mountains were disclosed, and their snow-clad slopes were flashed with beams of sunlight through dark clouds. A sharp-crested mountain arose on our right, and at its base was a fine lake three-quarters of a mile long. Leaving this behind, we came to a desolate pass, filled with great stones, snow-covered and barren. This was the highest point of the day, and then ensued a continuous descent into the Simpson valley. Here we got beyond the limits of our map and likewise of the visible trail. After long and tedious delay, we took our horses down a slope, not at all to their liking. Our route lay through a gulch filled with burnt timber, where the poor animals slipped and rolled their packs over their heads in a desperate descent of two thousand feet, until at length we fairly tumbled into the Simpson valley. However, an abundance of succulent grass for our horses, and hot Scotch for us, soon mended things. We were absolutely soaked through from our long march in the storm and made a late camp in burnt timber.

The next day, which was sunshiny and warm, found us at noon near the great ascent in the Simpson valley. At the base of this the river gushes out in springs. At the top there is no water. Ascending the steep slopes of this abrupt hill, we entered

a valley that is almost unique in these mountains. The whole place for three or four miles is a succession of weird hillocks of grey and whitish limestone of fantastic form and outline. No springs or streams water this "valley of the gnomes," as we called it, though a struggling growth of small spruces adorns the place and takes away its barren aspect. Our spreading line of horses appeared very picturesque as they followed the winding trail, which makes many little turns, or sudden pitches and ascents, among these extraordinary mounds and copses. The termination is at a small limestone-girt lake, which is about four miles from our old camp at Mt. Assiniboine.

It seems to me that this strange valley has been made by a tremendous catastrophe of nature. Opposite the great pitch where the whole level of the valley suddenly rises nearly a thousand feet, and also opposite the little limestone lake, where the character of the country changes again, are notches in the mountain ridge to the north, and it appears as though a massive fragment of the mountain, three miles long and from three hundred to five hundred feet thick, had scaled off and fallen into the valley. Above this lake the valley is lined with meadows where deep streams flow over beds of black gravel and then sink away and disappear. These waters probably pass under the broken masses of limestone only to reappear where the landslide ends.

Mt. Assiniboine suddenly appeared as we reached the lake. The distant peak was reflected in placid

waters, which our thirsty horses disturbed as they drank. It was now late afternoon and there would have been suggestions of making camp were we not so near Assiniboine. So we plodded on through weary miles of beautiful meadow land upheaved in countless hummocks, very tiring to ourselves and horses. I kept far ahead of our party, and at nightfall lit a fire on the site of our old camp, shouting back to their answering cries as they drove our horses at a gallop through the woods.

The period of four days which we spent here was full of interest to every one of our party, though certain minor accidents had changed our plans. One of our ice-axes had been broken by a horse falling against a tree, and moreover, my knapsack, containing all my personal effects and various scientific instruments, had totally disappeared. Campbell, our packer, went back eight miles the next day, but failed to find it. "Did you search carefully the long, steep pitch," I inquired. "That is the only place I did not go over," said he, "because I found the trail on the other side and thought I would take the chance on this one place." So he and I spent the next day in further search and found my roll upon the long slope, with a small burnt tree caught in the straps, showing how it had been torn from the pack.

While Bryant and Steele were climbing the neighbouring mountains, which were familiar to me, I spent the day in photographic work near the two summit

lakes, with one of which, Lake Aline, I was particularly anxious to succeed. This pretty sheet of water is typical of many mountain lakes. They are found near tree-line in a setting of larch trees and snow-drifts, which latter remain until July. Fed by melting snow and cold springs, their waters are remarkably clear, often shallow, and usually not so highly coloured as lakes of lower altitudes. Their chief beauty lies in their mountain surroundings, their comfortable banks lined with heather and larch trees, and their sinuously artistic shores. Only on the stormiest days are they without calms and reflections. The ripples on such lakes of small extent require but a brief respite from wind to settle into perfect calm, or to that more delightful stage, when the water, still tremulous yet generally smooth, gives soft reflections of trees and clouds.

The day of my return for the lost knapsack was spent by Bryant and Steele in an interesting manner. They made a partial ascent of Mt. Assiniboine, reaching a height of ten thousand feet, and exploring the snow fields, out of which rise the steep cliffs of the highest peak. Turning southward from our camp, they walked through open country to the base of the mountain, where, with rope and the two remaining ice-axes, they commenced a slow ascent of the snow and ice slope which descends from the upper glacier and rests on the lower. This ascent of seven or eight hundred feet accomplished and a short but difficult scramble over a water-worn cliff, led them to

Lake Aline.

a wide expanse of unbroken snow, which they traversed southward for two miles to the very base of Assiniboine's highest pinnacle. A projecting spur on an arête to the west offered an opportunity to reach easily a considerable altitude and command a view to the south. This they accomplished after several hours' work and attained a height of ten thousand feet. The forenoon of that day was nearly perfect. There were clouds and signs of thunder toward midday, and in the early afternoon they saw a storm in the south, and another in the north-west, which seemed to approach the mountain rapidly. Descending in haste, they had just come to the top of the last ice slope, when Steele's foothold gave way, and he fell, dragging Bryant after him. There was but one possible escape from a terrible fall. A projecting rock of considerable size appeared not far below, and Steele, with a skilful lunge of his ice-axe, swung round to it and anchored himself in a narrow crevice, where the snow had melted away. No sooner had he come to a stop than Bryant shot over him from above and likewise found safety. Otherwise, they would have fallen about six hundred feet, with serious, if not fatal, results.

The storms which were promised gathered in the late afternoon and were followed by a night of rain and wind. Next morning was one of foul and fickle weather. Showers of hail and snow and gusts of wind swept wildly through the valley and shrouded the mountains from view. Mt. Assiniboine seems

to be a gathering place for storms. During our visit in 1894, we had a week of bad weather at this place, in the middle of July, and now again, at the same period of the year, fresh snow covered the ground.

Before saying farewell to Assiniboine, some general remarks on this great peak would be in order. Mt. Assiniboine is the culminating point of a part of the mountains on the continental watershed. Five spurs reach out from the central peak and cover an area of about thirty square miles. Fourteen or fifteen lakes, small and large, nestle around its immediate base and supply the waters of three rivers, the Simpson, the Cross, and the Spray. Above two of the valleys the mountain rises abruptly six thousand feet, but above the one on the north the total ascent is only five thousand feet. Every side of this mountain is exceedingly steep, the east face being an absolute precipice, and the other two having slopes that average fifty degrees. The rock strata are nearly horizontal, and are eroded into many precipitous bands which girdle the mountain, and these, together with the disintegrated limestone and frequent fresh snow, will make it a difficult prize for the climber. In my opinion, the south face offers the best chance, but it will require heroic effort to bring horses into that waste of burnt timber, where in 1894 Barrett, Peyto, and I made our foot journey. The north side, where the mountain has the most striking appearance and has a remarkable resemblance to the Matterhorn, will no doubt be the point of attack. This

side, moreover, offers the pleasantest position and surroundings for a camping-ground.

Of the four routes to Assiniboine which are familiar to me, the one by which we returned to Banff in 1899 is the easiest, and at the same time most uninteresting. A gap in the mountains north-east of Mt. Assiniboine leads to the headwaters of the Spray River, and a rapid descent from the elevated plain where our camp was to the bottom of the deep valley is the most attractive part of the journey. On the right, one of the most stupendous cliffs in the mountains towered above us as we followed the trail through the forest. Then after a few miles we came to burnt timber, which we traversed uninterruptedly for two days. Part of our route was through the White Man's Pass, and the white men have burnt up all the woods. However, the timber is all standing between Assiniboine and the Spray lakes, so that the travelling is excellent.

From the Spray lakes to Canmore the miners have kept the trail in excellent condition for the sake of the fishing, and in proof of this we marched twenty miles on the last day of our journey.

The route over the Simpson Pass and down the river is by far the longest and hardest way and requires five or six days' travel. By the Simpson and up the river, through the weird and waterless Gnome Valley, is shorter, but not advisable. Our route along the high plateau region on the summit of the Rockies is the most varied and interesting way to

Assiniboine, but there is a very difficult descent of two thousand feet into the Simpson valley.

There is another possible way to reach Mt. Assiniboine from Banff, by following the south fork of Healy's Creek. I saw a gap in the mountains as we were descending the Spray, near its source, which appears to offer a low pass into the region where Healy's Creek rises. No trail is known to go up this fork of Healy's Creek and I have never been able to get any information from the Indians about a pass. Theoretically this should be the shortest possible route to Mt. Assiniboine, and the problem is a tempting one to some enterprising explorer with a week to spare.

CHAPTER VII

EFFECT OF ENVIRONMENT ON CAMP LIFE—PASSING OF OLD CUSTOMS—HOW TO COMMENCE A CAMPING TRIP—THE CAMPER HIS OWN GUIDE—PITCHING CAMP—THE WESTERN PACKER—BILL PEYTO—A CHARACTER SKETCH—A DAY OF CAMP LIFE—DRIVING IN THE HORSES—BREAKFAST ON THE FROSTY GRASS—SADDLING UP AND PACKING—GLORIES OF EARLY MORNING—ON THE MARCH—FOREST DEPTHS—OPEN MEADOWS AND BURNT TIMBER—FORDING TORRENTS—SILENCE OF HIGH ALTITUDES—ORIGIN AND DEGENERATION OF INDIAN TRAILS—AGILITY OF PACK-HORSES—CHOOSING A CAMP SITE—THE INDIAN CAYUSE—SOME UNUSUAL PACK-HORSES—EVENINGS ROUND THE CAMP-FIRE—PEYTO'S EXPERIENCE ON THE PIPESTONE PASS—ADVENTURE OF TWO PROSPECTORS—STARVATION IN THE WILDERNESS—WONDERFUL INDIAN TRAILING

CAMP life in every part of the world is affected by environment. The kind of animals used to carry the provisions and equipment depends on the country. In the Rockies of Canada the only animal suitable to convey the explorer and his outfit through the mountain forests and over the swelling rivers that oppose his progress is the Indian pony. Mules cannot be used in these mountains as they are farther south because they lack courage in water, and their small feet allow them to sink deeply

in those swamps that the larger hoofed horse can barely pass over.

Many customs of camp life in the North-west are derived from the fur traders. The earliest explorers and railroad builders have handed them down to the sportsmen and mountain climbers of to-day. But a new element is being introduced with the rapid increase of camping parties in the Rockies of Canada. While bacon and beans continue to be the mainstay of camp fare, as of right they should, campers are getting into the habit of carrying preserved fruits and vegetables, and such other luxuries as make the old-timers wonder at the change of customs. The rugged simplicity and semi-starvation of old days are passing. A guide once told me that upon a certain occasion he called at a wayside house for a meal. Seeing no pepper and salt to season the coarse fare, he ventured the polite suggestion that they would be appreciated, but was considerably startled when the old woman held up her hands in surprise. "What — luxuries!" she cried; "pepper and salt—luxuries, and all for two bits?" An instance of a similar nature concerns a hungry traveller who was invited to share a simple meal with a lone prospector. Nothing appeared on the festive board but a generous supply of bacon and mustard. The unfortunate guest, being unused to the ways of the country, declared that he did not eat bacon. "Ah, well," said his host, "I am very sorry. Help yourself to the mustard."

Camp life in the Canadian Rockies now affords a

much greater refinement of comfort and variety of eatables than ten years ago, just as camping out in the Adirondacks and eastern Canada suggests steak for breakfast, and even a newspaper not more than three days old.

The number of camping parties that travel among the Canadian Rockies every year is rapidly increasing. This manner of spending a vacation will soon become more popular as the great pleasure-grounds become better known. About one-half the number of campers are sportsmen, and the rest are either mountain climbers or explorers. Many, of course, wander among these wilds for the mere love of nature, and for the simple and healthful life in the evergreen woods, surrounded by mountains, running streams, or placid lakes.

Imagine, then, that you intend to make a trip into the mountains. You must first engage your packer and cook, and procure saddle-horses and a full outfit of blankets, tents, and general camp necessaries. There are agents at Banff, the general starting-place for all expeditions in the eastern range, who will furnish you with horses, men, and everything needed for trips of whatever length or nature, and thus relieve you of all responsibility. One of the most experienced outfitters is Tom Wilson, who packed for the railroad surveyors many years ago. During the summer season "Wilson's" is frequently the scene of no little excitement when some party is getting ready to leave. Then you may see ten or fifteen

wicked-eyed ponies, some in a corral and the rest tied to trees ready for packing. If the horses are making their first trip for the season there will be considerable bucking and kicking before all is ready. Several men are seen bustling about, assorting and weighing the packs, and making order out of the pile of blankets, tents, and bags of flour or bacon. The cayuses are saddled and cinched up one by one, with many a protesting bite and kick. The celebrated "diamond hitch" is used in fastening the packs, and the struggling men look picturesque in their old clothes and sombreros as they tighten the ropes, bravely on the gentle horses, but rather gingerly when it comes to a bucking bronco.

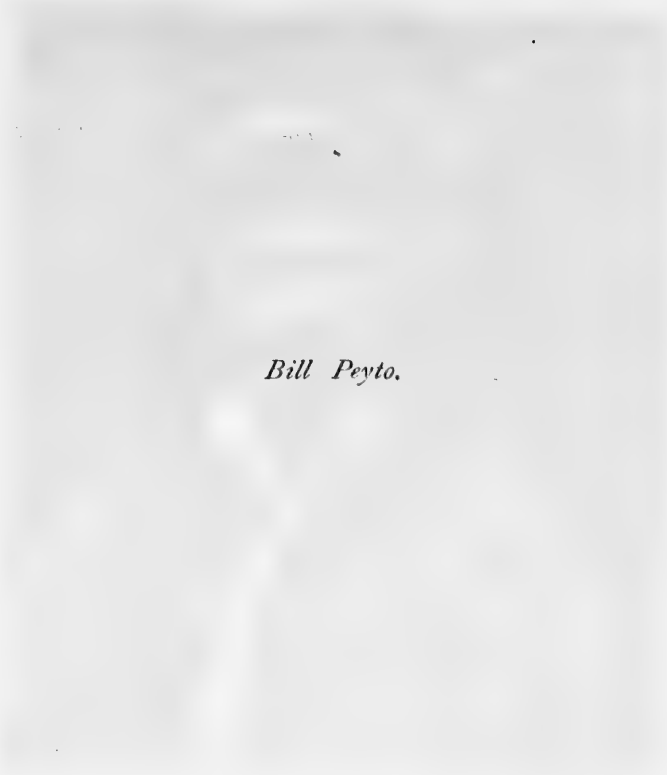
A crowd of the business men of Banff, who usually take about 365 holidays every year, stands around to offer advice and watch the sport. Then the picturesque train of horses with their wild-looking drivers files out through the village streets under a fusillade of snap-shot cameras and the wondering gaze of new arrivals from the east. But these evidences of civilisation are soon left behind and after a few miles the primitive wilderness is entered. Some parts of the mountains are more easily reached from other points than Banff. Thus you leave the railroad at Castle Mountain for the Vermilion Pass, at Laggan for the Pipestone and sources of the Bow, and at Field for the Ottertail and Kicking Horse rivers. In such cases it is easier to meet guides and horses at these stations and commence camp life there. The maps of this

part of Canada give only a rough idea of the country at best, while many parts of the mountains are even yet a geographical blank. Then, too, the maps are on a scale which does not permit of much detail, so that what seems a short and easy journey on the map often proves a struggle amongst bewildering ranges of mountains when the trip is commenced. Moreover, there are as yet no guides for these mountains, and the explorer must depend in general on his own judgment in finding a way. This is done by following the great rivers which, by their relative position and direction, are always a certain clue. The several ranges of the Rockies have an almost constant trend north north-west, and south south-east. This fact, along with a general knowledge of the streams and lakes, or information picked up from the Indians, is the main reliance of the camper. Every year the packers who go on such trips gain knowledge of the passes and trails, so that the day is not distant when there will be efficient guides for many of the most interesting excursions. However, the necessity for self-reliance and the use of one's own judgment in picking a way through the countless obstacles of these mountains are great sources of pleasure.

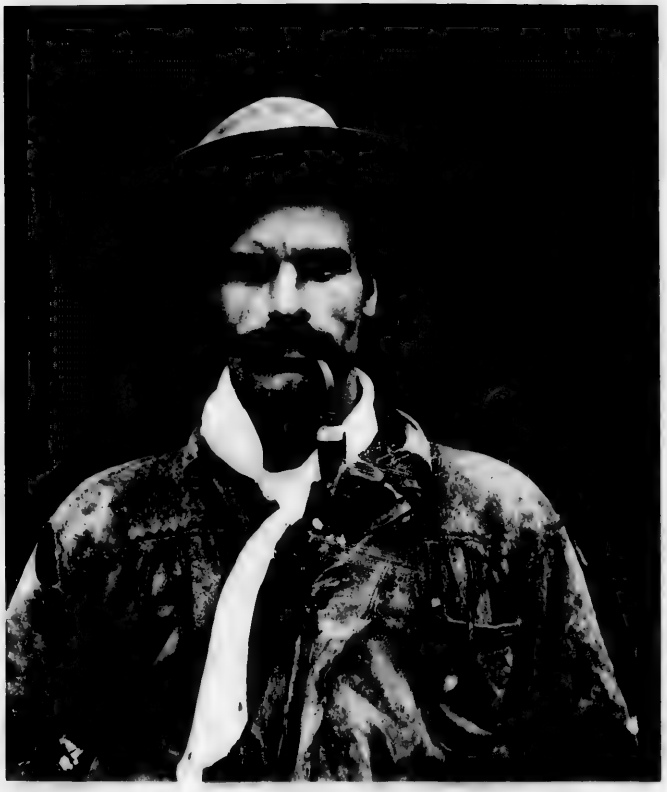
The camper inexperienced in the methods of the North-west, has much to learn. It is quite possible that until the first camp is made he is quite ignorant of what all those mysterious bags and boxes contain which have been transported at great expenditure of

horse-flesh and bad language a day's journey into the woods. The pitching of the first camp is a revelation to the inexperienced. After a suitable site has been chosen, with fire-wood and water conveniently near, and a meadow not far away where the horses may find pasture, the men cut tent-poles and the cook spreads his pots and pails round a crackling fire. The pack-saddles and blankets are usually piled beneath some large tree and covered with a canvas sheet,—while another sheet covers the bags of provisions. The cook soon has several pots on the fire, stewing apples or apricots, making hot water for tea or cocoa, or perhaps cooking the omnipresent bean. Two boxes, called cook boxes, stand near at hand, and they contain cans of condensed milk, all the spices and condiments, the small tins of preserves and pickles that have been opened or are in constant use, as well as the table dishes, plates, knives, forks, and spoons, which are no less necessary. It may be a week or more before the numerous small bags tucked away in larger ones have been sampled.

While dinner is preparing and the delicious odour of frying bacon blends with the pungent smoke of the spruce-wood fire, there is time for a little study of our packers and cook. Who are they and whence did they come? Perhaps no more interesting character has ever appeared in this region than my old packer, Bill Peyto. I made my first excursion to Assiniboine with him and have travelled several



Bill Peyto.



hundred miles under his guidance. Bill is very quiet in civilisation, but becomes more communicative around an evening camp-fire, when he delights to tell his adventures. His has been a roving life. The story of his battle with the world, his escapades and sufferings of hunger and exposure, not to mention the dreams and ambitions of a keen imagination with their consequent disappointments, has served to entertain many an evening hour. Peyto assumes a wild and picturesque though somewhat tattered attire. A sombrero, with a rakish tilt to one side, a blue shirt set off by a white kerchief (which may have served civilisation for a napkin), and a buckskin coat with fringed border, add to his cowboy appearance. A heavy belt containing a row of cartridges, hunting-knife and six-shooter, as well as the restless activity of his wicked blue eyes, give him an air of bravado. He usually wears two pairs of trousers, one over the other, the outer pair about six months older. This was shown by their dilapidated and faded state, hanging, after a week of rough work in burnt timber, in a tattered fringe knee-high. Every once in a while Peyto would give one or two nervous yanks at the fringe and tear off the longer pieces, so that his outer trousers disappeared day by day from below upwards. Part of this was affectation, to impress the tenderfoot, or the "dude," as he calls everyone who wears a collar. But in spite of this Peyto is one of the most conscientious and experienced men with horses that I have ever known.

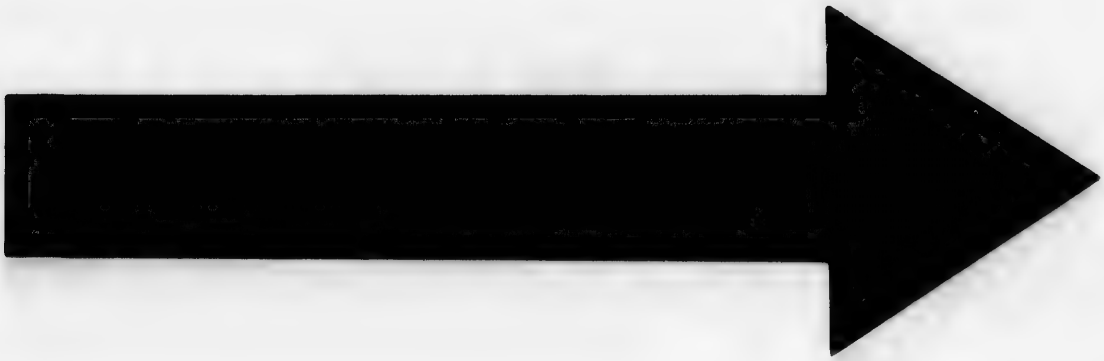
In camp, Peyto always goes down to see his horses once or twice a day even if they are several miles distant, and I have even known him to look after them in the depths of night when he thought they might be in trouble. When the order to march has been given the night before, our horses are in camp at dawn. Quick and cool in time of real danger, he has too much anxiety about trouble ahead, and worries himself terribly about imaginary evils. He sleeps with a loaded rifle and a hunting-knife by his side. "Bill," said I, one night, upon noticing a row of formidable instruments of death near me, "why in the mischief do you have all of those shooting-irons and things here?" "I tell you," said he, with an anxious look, "I believe this country is full of grizzlies; I heard a terrible noise in the woods this afternoon, and besides that, they say the Kootenay Indians have risen. They may come into the valley any night."

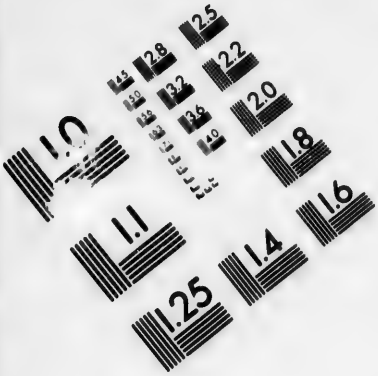
A picture of a train of horses crossing an angry stream comes to my memory, and one animal has put his forefoot through the head-rope and fallen helpless as he is swept away by the torrent. Suddenly a man leaps from his saddle, and with a sharp knife in hand, rushes out into a foaming swirl of waters whence it seems impossible for anyone to return alive. A flash of steel in the sunlight shows the rope has been cut, and after a struggle the horse regains the shore, dragging the man after. It was Peyto! On another occasion a fast freight, coming

suddenly around a curve, surprised two pack-horses at a few yards' distance, but Peyto struck one on the head, and seizing the rope of the other, pulled the beast from the rails as the engine rushed by, while everyone else stood immovable in a paralysis of fear.

The best idea of Rocky Mountain camp life might be had by following in imagination the events of an ordinary day. The first sound that usually awakens you is the tramping of horses, the approaching shouts and curses of the packer, and the tinkle of the bell mare's bell as the ponies are driven to camp. The packer's first duty is to get up at dawn and go after the horses. They may be miles away or they may have crossed a deep stream. After one of the tamest animals has been caught, the packer rides bareback and drives the others in at a gallop.

By this time the imperturbable early riser has begun to make life miserable for his companions, though it may be an hour before breakfast. There is often found in camping parties one of those cranks with an old saw—as false as was ever written—about, "Early to bed," etc., to back him in his evil ways. He is up at the crack of dawn, even in these northern mountains where the sun shines eighteen hours a day. The evening camp-fire, the hot punch, and the good stories of adventure are all lost on him that he may prowl around alone in the darkness and frost of early morning, to the worriment of his friends.





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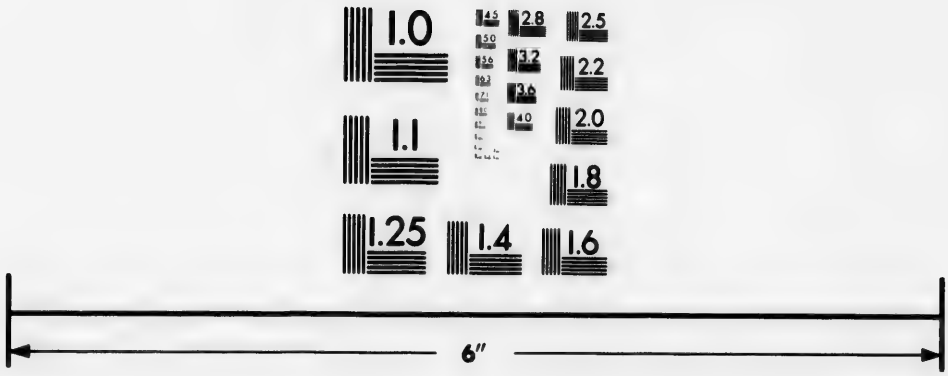

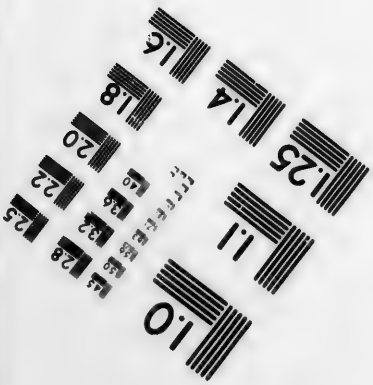

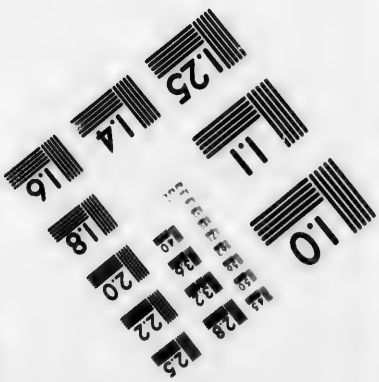

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At length, however, the cook shouts—"Breakfast is ready"—an announcement that was heralded by the sound of the axe, the crackling of fire-wood and the sizzling of bacon. A cold wash in a neighbouring stream or lake is a good awakener. Presently everyone gathers around the "table," a piece of canvas spread on the frosty grass and flowers. Porridge and milk, bacon and beans, hot coffee and bannock or camp bread, with possibly some kind of stewed fruit, compose the ordinary fare. The hour immediately after is busy for all. While the packer is "saddling up" the cook washes the dishes and packs the small articles in his cook boxes. Open tins are provided with rough-and-ready covers and placed so their contents will not spill while on the horse's back. The large bags are tied up and everything gradually becomes ready for packing. Meanwhile, you roll up your personal effects, toilet articles, changes of clothes, and make ready your camera and such scientific instruments as you carry. The tents, which have been standing so that the morning sun and wind may dry the dew or rain, come down last of all, and are rolled up as side packs. Then commences the real work of packing, which after the first day or so becomes easier. The particular pack for each horse is known, and everything is systematised. However, the constant change in the weight of bags, as provisions are used, requires some little attention on the part of the packer, because one of the most important essentials of good

BREAKING CAMP

packing is to have the two side packs of equal weight.

While the men are at work there is an opportunity to write up notes of the previous day. Frequently the frost or dew remains on the grass in these deep valleys till marching time, though the sun may have been shining for hours on the bare rocks and snow fields of the mountain tops. The slowly approaching rays creep over the forest, and at length the sun appears above some mountain ridge and pours a sudden flood of light upon the camp. I once saw the morning sun thus suddenly strike upon an upland flower-garden. A moment before the white anemones were hanging their blossoms and shrivelled leaves under the death-like touch of frost. A sudden splendour of illumination poured over the field as the sun rose above a mountain, and in a moment, as if by magic, the frost crystals melted away into pendant drops of heaven's own distillation. Beads of clear water dripping from leaves and tinted petals, made tremulous light flashings like the sparkle of diamonds and rubies. The calm of night still rested upon the field, and there was not the slightest air motion. But the sunlight was at work, and in a moment a leaf quivered, then another, and a drooping blossom made a scarcely sensible movement. This was the commencement of a marvellous change, for the hanging leaves began to straighten, the closed petals of numberless blossoms expanded in the sunlight, and in a short time the whole field of nature's

wild flowers was full of motion, and every plant was quivering and leaping toward the life-giving warmth. What an illustration of the power of sunlight! And what vitality these Alpine plants must have to survive several hours of frost in their midsummer nights!

The day's journey means many new experiences. As the horses file along the narrow trail, the mountains seem to move majestically, changing their outline at every new point of observation, and showing new glimpses of snow fields and rugged cliffs. With every great bend in the valley, or upon each pass ascended, there comes a long vista of strange mountains into view. During the five or six hours of the average day's travel, many incidents occur to add interest to the marvels of scenery. Except where the trail is very good the train of horses is not driven without the exercise of patience. In bad places their efforts are accelerated by torrents of profanity that shock the tenderfoot. The men claim that pack-horses will not travel well unless roundly cursed, because it is the only language they understand.

The monotony of riding an Indian pony during the slow march of five or six hours as the poor beast struggles over logs and through swampy places, fighting bull-dog flies and grey gnats, is broken by that endless variety and change of surroundings, that are a source of delight in every part of these mountains. Sometimes the trail leads for a time

through deep forests where the mountains are lost to view. In the cool depths of forest shade the rhododendron grows, and the moist and mossy ground is often dotted with the wax-like blossoms of the one-flowered pyrola, or the pretty violet-like butterwort, with its cluster of root leaves smeared with a viscid secretion. Some stupid fool-hen, a species of grouse, is more than likely to be seen in a tree near the trail, and proves that her name is deserved, when the bullets fly. She merely cranes her neck in stupid wonderment, till at last her head goes off, and then there is a great flapping of wings, but it is too late. The bird will, however, make a fine dinner to-night.

From silent forest depths the trail no doubt leads alongside a noisy stream, boulder-strewn, and hemmed by willows and birch, or across some meadow, gay with scarlet painted-cups, tiger lilies, or forget-me-nots. Here the horses take hasty mouthfuls of the rich grass, as they are hurried along to the other side. Perhaps the border of a lake is traversed, and while the splashing horses move willingly, there is time for glimpses of new beauty in water colouring and reflected mountains and trees. Stretches of burnt timber break the monotony of the unending panorama at more or less frequent intervals. Burnt forests, where the trees still remain standing, are easy to travel, but usually the fallen trunks are crossed three or four deep, and every year adds to the number. The procession comes

to a halt after a few yards of progress in such places, and you often wonder what is going forward, but hear only the sound of the axe for answer. "We were surrounded," says one writer, "by muskegs, burnt timber, and bad language," in speaking of such a place, and it is impossible to travel far in the Rockies without finding a similar environment.

The excitement of fording deep streams or noisy torrents of the lower valleys is in greatest contrast to quiet travel through some mountain pass where an eternal silence reigns. Here, perhaps, there are bare limestone cliffs, guarding a turf-lined pass, far above the limits of trees. Scattered pools are collected in the inequalities of rocks. No sound of bird or insect, of running water or woodland breezes, breaks the oppressive quiet. The tinkling of the bell and the tramp of horses give the only sign of your passing through these desolate high valleys.

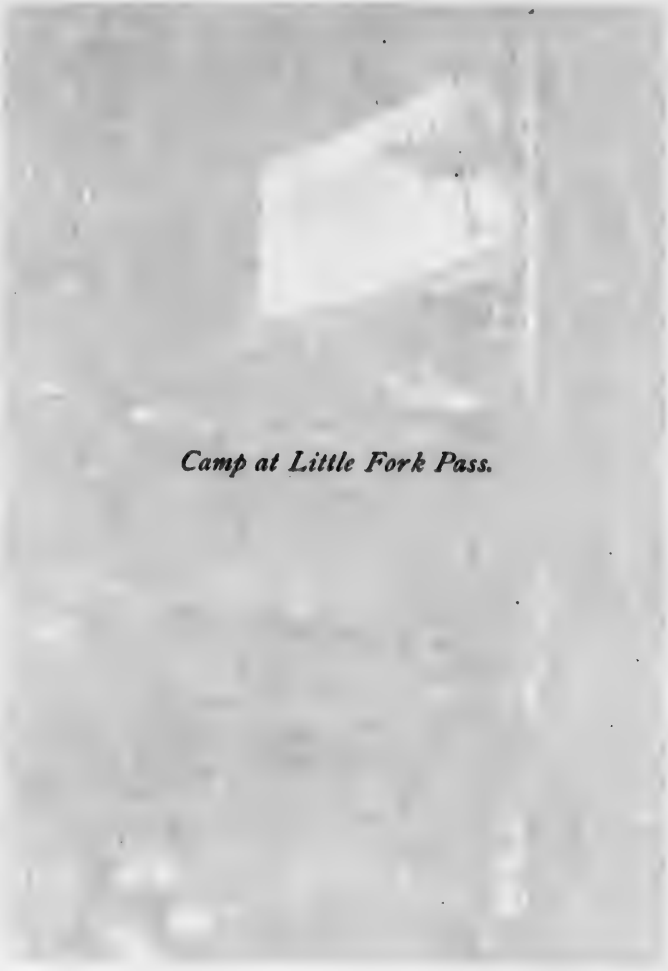
But when trails, either good or bad, penetrate it, how can a country be unmapped or unknown? Perhaps in the same way that the natives have made foot-paths through the deserts of Australia and the jungles of Africa, the Indians of the North-west have made trails through all the larger valleys of the Rockies. These trails which, for aught we know, may date from the era of primitive man, and so represent some of the oldest of human foot-paths, are used by the Indians on their hunting expeditions. Before the coming of white men, they were used as a means of communication between the Kootenay

Indians and the tribes that inhabit the plains, for the bartering of fur, game, and horses. So all the important valleys and passes have well-marked trails and the side valleys inferior ones, though it is not always easy to find them or stay on them when found. A trail is subject to constant degeneration, for several reasons. Avalanches and snow-slides sweep over it, and sometimes cover a long stretch with broken trees and great masses of rock. New areas of timber are burned over every year, and the charred trees, after standing a few years, begin to yield to the wind and storms and fall across the trail. Rapid mountain streams often change their courses, cutting away new banks and undermining many places where trails were made. Even in the primeval forest the underbrush has a constant tendency to choke these pathways, and aged monarchs of the forest die and fall across them. No one ever cuts a tree, if there is a way around, because every one assumes, very selfishly, that he may never come that way again. Thus the Indian trail is a narrow pathway, worn by the hoofs of horses, clearly marked in open meadows or deep, mossy forests, but ever winding and retreating to avoid a multitude of obstacles and usually disappearing altogether when most needed, and some steep cliff or avalanche track or burnt timber seems to block the way.

A day's march is often attended by incidents that give zest to the work of making progress. Bucking ponies try to rid themselves of their packs

or riders. Packs come loose and must be adjusted, and sometimes a panic is caused among the horses when a hornet's nest is disturbed. Horses sometimes get beyond their depth in crossing rivers, fall into muskegs up to their ears, or break a leg in fallen timber. Familiarity breeds no contempt for these agile Indian ponies, and new difficulties only cause renewed admiration of their wonderful skill, in jumping logs with heavy packs on their backs, threading the obscure trails and pitfalls of burnt timber, or fording the icy rapids of mountain streams.

The length of the march necessarily depends on various circumstances, though "camp rules" say that six hours of trail work is all that should be done in one day. There must be a swamp or meadow not far distant, where the horses may pasture, with fire-wood and water near the camp site. Happily the two latter requisites are almost invariably present in the Rockies of Canada. First the horses are tied to trees, quickly unpacked, and sent off to their well-earned liberty. While they are rolling on the grass, joyful that another day's work is ended, the cook builds a fire, and soon has hot water for tea and other refreshments, of which the details are unimportant, if things are served quickly, and many times. What is the use of putting a man in a glass cage, and taking his temperature and weight to find the heat- and energy-value of various foods? Let him come to the mountains, walking and climbing ten or twelve hours a day, and observe for himself.



Camp at Little Fork Pass.

After a hearty breakfast of oatmeal (a splendid food for the sedentary) he will be ravenously hungry in two hours, of cornmeal, after three hours, of bacon and bread, in four or five hours, while pork and beans will sustain him from six to ten hours and give the utmost physical buoyancy and strength. Tea has the greatest stimulating effect on utterly weary muscles and nerves. Coffee, however, is better in cold weather, and cocoa for an evening drink around the camp-fire. In my opinion alcoholic stimulants should be used in camp life only for their reviving effect after exposure to cold and exertion, and never before or during any physical undertaking.

One of the chief essentials of a camp, after the question of wood and water has been settled, is a piece of level ground. In certain meadows and open places, the rich grass will afford sufficient bedding on which to spread the blankets, but usually some bushes or stones must be cleared away, and balsam boughs laid on the ground, to give the required comfort. The cook boxes, extra blankets, cameras, scientific instruments, and small articles are tucked away in the tents, where rain cannot injure them, but most of the provisions are piled under some tree and protected by a large canvas cover, along with the pack-saddles, cinch ropes, and other camp necessaries.

No one can travel far on a camping expedition without feeling an interest in the Indian pony, upon

which so much depends. The Indian pony, or cayuse, probably owes its origin to a cross between the mustang and the horses introduced by the Spaniards in the conquest of Mexico. They are small horses with very great endurance and ability, combined with sufficient strength for all needful purposes. Some of them have "glass eyes," or a colourless condition of the retina, supposed to be the result of too much in-breeding. They are raised on the plains chiefly by the Indians, and their only food throughout their days is grass. In winter, most of the horses are driven from the mountains and pastured among the foothills, where they paw away the snow and find abundant nourishment in the "bunch grass." The hardest time comes at the end of winter, when the snow melts and freezes alternately. Then the ponies must starve unless they are driven in and fed by their owners.

There is as much diversity of temperament among horses as among men. Some are nervous and intelligent, while others are stupid and obstinate. Horses do not seem to do as much independent thinking as mules, and are slower in many feats of intellect. A mule may be taught to travel miles alone over a beaten route, but a horse will stop and eat grass at the first meadow. They say a mule will walk over a trestle bridge like a dog, while a horse will invariably fall through before he has gone ten yards. But in swamps and deep water, the horse is far superior. Almost all cayuses are liable to buck and kick after a long

period of rest. These bad habits may have descended from their primitive ancestors, in efforts to throw off wolves or panthers, but are now used with effect on riders and packs. I have seen a horse stand up and fight with his forefeet, and an old bronco-buster once told me that he had had horses rush upon him and try to kill him by diting and striking.

Two of the most interesting pack-horses that I have ever known are the "Pinto" and the "Bay." The Pinto is a well-formed, graceful pony, with a light chestnut coat and irregular white patches on his flanks and chest. He has a long, beautiful tail and well-formed head, but he is so quick and nervous that I have never yet succeeded in getting a good photograph of him. This Pinto is tame and affectionate, but afraid of any sudden movement, because, no doubt, some former owner had abused him. The Pinto is wonderfully intelligent, and as Peyto says, "knows more than anyone else about the trails." Sometimes we placed Pinto ahead and let him lead the procession for hours. Anyone seeing such a feat for the first time would find it quite incomprehensible. Once Pinto, when thus leading, took a small branch trail and left the well-defined open path. "You are wrong for once, Pinto, and have been caught napping at last," said I to myself. While the procession moved on, I followed the main trail, and soon came to a tree that had fallen across the trail and had caught about four feet from the ground. While I was

examining this Pinto was about a quarter of a mile ahead, once more on the main trail, having gone round this unseen obstacle, unknown to any of us, but probably remembered by him from some previous year. The Bay is Pinto's inseparable companion and friend. The two horses are always at the head of the line, and rarely allow any others to precede. The Bay defers only to Pinto's unusual intelligence and gives first place to him. Each of these horses carries two hundred and fifty or three hundred pounds on his back, while the smaller animals struggle with less by an hundredweight. I once saw the Bay clear a log three feet and ten inches from the ground, of his own will, under a heavy pack. These intelligent animals know all the obstacles of the trail, what two trees their pack will go between, what low branches they cannot pass under, and at a gentle word they hurry along, where an ordinary cayuse will stop to feed, or when shouted at, will run off into the bush. The Bay is the tamest animal I have ever known, and often loiters about the camp and pokes his head over one's shoulder as a gentle hint for a taste of salt or sugar. His feet are never insulted with hobbles, nor his head with a rope, for you may walk up to him any time in the pasture and place your arm round his great neck.

Old Denny is a horse of another colour, a shaggy, thick-set cayuse, with a long coat and trailing fetlocks. No ambition ever stirs him to be in front, but on the contrary, Denny never allows any animal to

be behind him, except the saddle-horse of some swearing packer who is hunting him along. Denny was born with an unconquerable tendency to be slow, and though you shout till you are hoarse, old Denny pursues his dignified way regardless. The result is that this singular animal always gets behind the procession, which he follows at his own sweet will. I have seen old Denny come strolling into camp half an hour after the other horses were unpacked. However, he is a conscientious old fellow, and never kicks or bucks or crushes his pack against trees. So he was selected to carry the most perishable packs, and has safely transported my valuable cameras hundreds of miles through the mountains. Peyto told me that Denny once had a brute for a master, who used to beat him terribly with a stick, till the poor animal would fall to the ground. After that he was taken to the coal mines at Anthracite, near Banff. In the perpetual darkness, however, Denny refused to work, in spite of the beatings and horrible cruelty that the miners practice on their horses. He next appeared as a pack-horse, and under the influence of kind treatment, became one of the tamest of the horses. Besides salt and sugar, which nearly all horses like after a few tastes, he would eat bread, flour and even corn-meal, which, strange to say, these Western ponies do not consider proper food for horses.

No matter how wild your horses may be at the commencement of the journey, they will become

gentle and tame with kind treatment. A little salt every morning for a week will gain their confidence, and will save, in many ways, far more than the outlay.

The afternoon after a day's march may be occupied in short excursions to adjacent valleys or points of interest in the neighbourhood, so that the period after dinner, when the long day ends and the camp-fire lights up the forest, is the best time for stories of adventure and for sociability. The best camp-fire is, in my opinion, a big one, with great dry logs that crack and blaze brightly and make but little smoke. The Indians laugh at us and say, "White man make big fire—sit far off. Indian make little fire,—sit close" —right over it, in fact, with a few sticks, like a pile of jack-straws—for a fire. The advantages are that there is but little smoke and not much of a wood-pile to cut. Of course there is a limit to size, and I have seen fires where you had to make toast or broil a grouse on a twenty-foot pole. A camp-fire on a dark night always seems most cheerful in a deep forest, when the cheery sparks soar away to meet the stars and a ruddy glow illuminates the sombre trees and picturesque figures grouped before the tents.

As the chill of night came on, we often had a light supper, or in any event made a pot of hot cocoa, and under the cheering influence of this, Peyto used to harangue us on his adventures. With a jerk, sailor-fashion, at his trousers, and a playful kick at the fire, I can imagine him, standing in picturesque

OUR CAMP AT MORAINE LAKE

attitude to warm himself. "Well," says he, "did I ever tell you about my journey up the Pipestone?" To our negative replies, he gives the story. "Some years ago a fellow by the name of S., and I, thought we would put in the winter on the Saskatchewan and trap marten. I had got three hundred dollars ahead, the only luck I ever had, and blew it all in on an outfit. You see we had a pretty big grub-pile besides a lot of traps, and it took a good many horses to tote it all. I thought we would make a pretty good haul by the way we sized up the country when I was there two years before. So we started from Laggan and struck for the head of the Pipestone. It was late in October, and there was some snow in the valley, but we could n't savey any such snow-drifts as we ran into near the summit. You know they say the Pipestone Pass is the highest in the mountains, and we were a long way above timber, when it came on to snow and blow worse than anything I ever saw before. The snow was five feet deep, and as it was our first time through, we did not know that we could ever reach the pass. I got out the shovel and cut a path for the horses, but I give you my word, before we had gone a hundred yards, the whole thing was blown full of snow again. I threw down the shovel and we started for Laggan, but by this time you could not see anything for the snow and wind. Neither of us could tell where the trail was. I was riding Pinto, and says I to myself, 'I guess the cayuse knows where we are better than I

do,' so I let him have his head and never said a word, and you may not believe it, but that horse took us right back to Laggan in two days."

"Some fellows did n't have such luck as you did, Bill," said one of our men, "for an old prospector told me he was coming down the Canoe River, and was somewhere near the Big Bend of the Columbia, I think it was, when he ran across an old camp, with everything lying around loose, and three skeletons on the ground."

This recalled the story of an expedition that went out into the mountains and was never heard of again, men and horses having apparently perished together. Nothing less than a great snow-slide could so completely have annihilated an entire party.

One of the most exciting incidents of adventure in these mountains occurred in the summer of 1896. Two prospectors, named Temple and Smith, started from Canmore by way of the White Man's Pass to reach the Kootenay country. Having come to the gorge of the Vermilion River, their two pack-horses, overloaded and exhausted by long marches, could proceed no farther. As a last effort, they built a raft, and with their entire outfit commenced a voyage down the river, after abandoning the poor horses to their fate. It was not long before the raft came to very rough water and was wrecked in the rapids of the treacherous stream. The men reached the shore after the greatest effort, but, unfortunately, each on opposite sides of the river. After considerable

shouting, one to the other, neither would consent to attempt to cross it, and the two separated in the heart of the wilderness, having saved neither food nor blankets from the wreck, nor firearms to procure game. Leaving Temple to proceed west, Smith endeavoured to retrace his steps and find the horses, but he soon lost all idea of locality and direction. He wandered ceaselessly through the forests, slowly dying of starvation, though after several days he managed to kill a single grouse, which he ate raw. At length after eleven days, overcome with weakness, his courage failed, and he lay down to die. Just then he was startled by the loud whistle of a railroad engine, a sound that restored for a time his hope and strength. He came to a large river, which was in fact the Bow, and on the farther side saw some section men at work on the railroad. They came over in a boat in answer to his shouts and rescued him from death.

At Banff, where he was taken to recover his strength, he related the story of his sufferings and of his lost companion, about whom nothing had been heard. A relief party was hastily organised, consisting of the Rev. William Black of Banff, and a Stony Indian (our old friend) William Twin. William, with that wonderful power that the Indians alone seem to possess, of observing the faintest signs, followed the track of the rescued prospector up Healy's Creek, over the Simpson Pass to the Vermilion River, and thence to the place where the fatal raft had been

wrecked. One of the horses was found here, and then, crossing the river, he took up the trail of the other prospector. With marvellous skill he led the way, even where the hard ground or solid rock preserved no apparent footmarks. In one place he crossed a river on a log-jam, saying, as he pointed to the smooth logs: "Me see him trail — he go here — he go here," and in fact footprints appeared in the sand on the other side. The trail led them in two days more to the stage road on the Columbia, and they surmised that Temple had reached safety, as indeed was the case. Strangely enough, he had not mentioned their adventure or told about leaving his companion, who came so near perishing, and only escaped death by the merest chance.

CHAPTER VIII

THE WAPUTEHK RANGE — BURNT TIMBER OF THE BOW VALLEY — RELICS OF OLD TIMES — THE LOWER BOW LAKE — MUSKEGS — THE COLD WATER LAKE — DESCRIPTION OF ITS SHORES — THE GREAT BOW GLACIER — APPROACH TO THE LITTLE FORK PASS — INSPIRING MOUNTAIN SCENERY — A SURVEYOR'S MISTAKE

THE Summit Range of the Rocky Mountains as it extends north from the deep and narrow valley of the Kicking Horse Pass, has a special name, the Waputehk Range, derived from a word which, in the language of the Stony Indians, means the White Goat. From the top of a mountain in this range the climber has on every side a vast extent of ridges. In some places they rise into peaks of great height, and in others they subdivide into numerous spurs of lesser altitude. As usual throughout the Rockies, each ridge has a precipitous escarpment on the east, and a more gentle slope on the west. No passes cross the range between the Kicking Horse Pass, used by the railroad, and the Howse Pass, thirty miles to the north. Then another long interval northwards to the Athabasca Pass is said by the Indians to offer no route available for horses. The ridges and peaks of these

mountains reach a height of between ten and twelve thousand feet.

Among them there are many large snow fields, some of which are continuous for ten or fifteen miles or more. This results from a very heavy snowfall, as the westerly storms sweep over the lofty and continuous range, and also from the existence of extensive level benches and elevated regions. From these snow fields glaciers descend into the valleys and carry away the surplus precipitation from the higher altitudes. The Bow River or south branch of the great Saskatchewan takes its source in two lakes which lie among the valleys of the eastern side of this interesting range. I had learned about the wonders of this region from Tom Wilson, and my interest to see them was further increased by the fact that few, if any, tourists had as yet been to the Bow lakes.

I left Laggan on the fourteenth of August, 1895, with Bill Peyto, Harry Lang, and five horses in our outfit. The less said about the first eleven or twelve miles the better. It is nothing but a continuous burnt forest where much of the timber has fallen and become inextricably crossed, and where the trail, when most needed, invariably disappears under a pile of logs. Though I had had two men cutting out the trail for several days, it required two days' march to reach the first Bow Lake, only a little more than ten miles in a straight line from Laggan.

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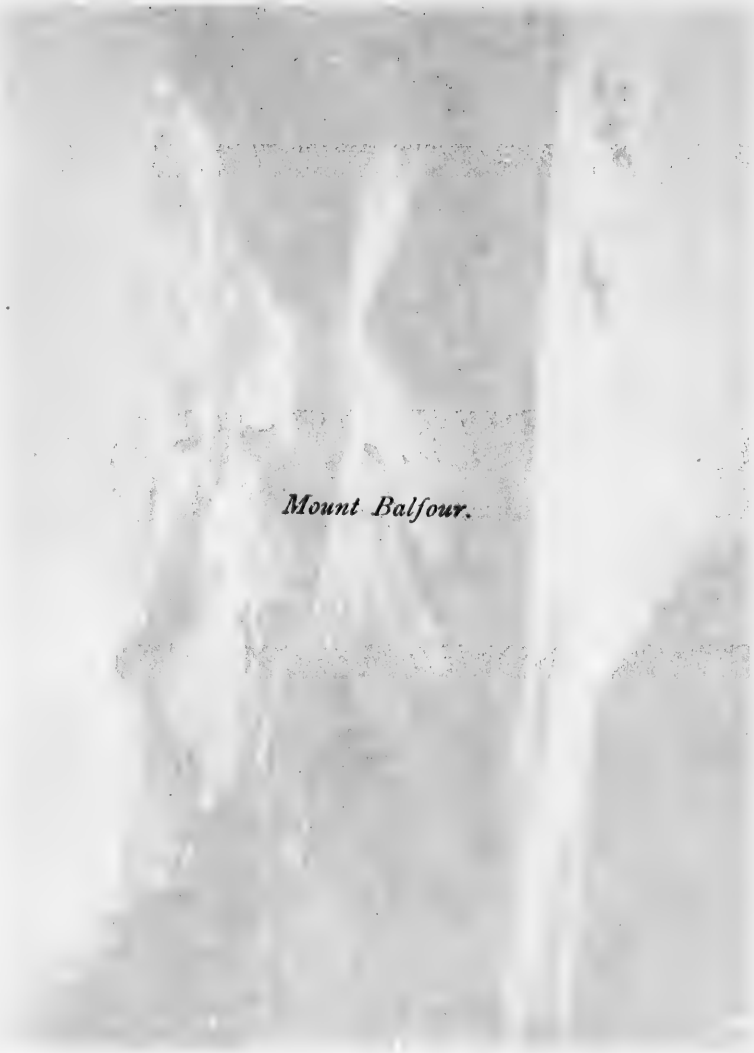


Mount Balfour.

woods on the east side of the Bow. This valley was once a proposed route for the railroad which should cross the range by the Howse Pass. I believe the work progressed so far as the making of a general survey to that pass, and building a tote-road about twenty miles up the Bow. The trail, which is the worst in the mountains, follows the old road part of the time, and then wanders off into a trackless waste of burnt timber, for among other things, the railroad men, no doubt, set the woods on fire. The date of the fire can be pretty accurately determined by the age of the growing trees which have since sprung up. There is very little left of the old tote-road, and it is only evident in corduroy places and old tumbled-down bridges over streams, or the relics of former camps where wooden boxes, tin cans, and rusty iron stoves have outlived storms and weather to bear silent witness to the glories of the past.

We had an excellent camp by the river, where we caught all the trout that we could eat. The river there is less than one-half its size at Laggan. The next day Peyto and I visited the lake. We caught the Bay, and made the intelligent old horse carry us both at once across the river without saddle or bridle. We then scrambled through the woods, and over the gullies of former stream channels to the lake. One branch of the Bow flows into the lake and comes out a quarter of a mile below, while the other continues straight on at some distance.

We followed the west shore of the lake, which is about four miles long, and after a hard walk, came to the other end about noon. At the upper end, there is a flat gravel delta, sparsely adorned with purple fireweed and scattered bushes, the seeds of which must have come down in former floods. The delta has a straight edge across the lake. The muddy stream from the upper part of the valley apparently changes its course from time to time, and so preserves a level gravel wash. We traversed the delta and continued up the valley to a fine glacier, where we made hot coffee and ate lunch. From this point we could see Mt. Balfour, one of the high mountains on the backbone of the continent, which was literally covered with perpetual snow and glaciers. It was difficult to realise, as we looked up the long and gentle slope of this mountain, that it rose five thousand feet above us. The glaciers showed the lines of flow very clearly. Six converging streams of ice united to form the part on our right, while that on the left descended steeply and made a fine ice cascade. A waterfall poured gracefully over a dark precipice on the opposite side of the valley, and added a little life and motion to the dazzling expanse of snow.

On the next two days we continued our journey up the Bow. A feature of the Bow valley, in this part, is the presence of swamps of a peculiar nature, called "muskegs." The boggy ground, where the peat-moss reeks with moisture, trembles under the

footsteps of men and horses. Some of these muskegs are half a mile across and from a distance appear to be flat meadows, where coarse grass and reeds grow luxuriantly, and the monotony of the level expanse is interrupted by clumps of scrub birch and willow bushes. Men can traverse these in comparative safety, but horses have the greatest fear of them, and with justice, because wherever the upper surface of vegetation is broken through, there is no foothold in the soft mud and water underneath. Sometimes it is impossible to get the poor animals out, though with encouragement and urging they will struggle indefinitely, and in this respect they are far superior to mules. The latter is a dry mountain animal, unfit for swamps and rivers. We had considerable trouble in crossing parts of such muskegs, and in some places were compelled to cut branches and corduroy a path for our horses.

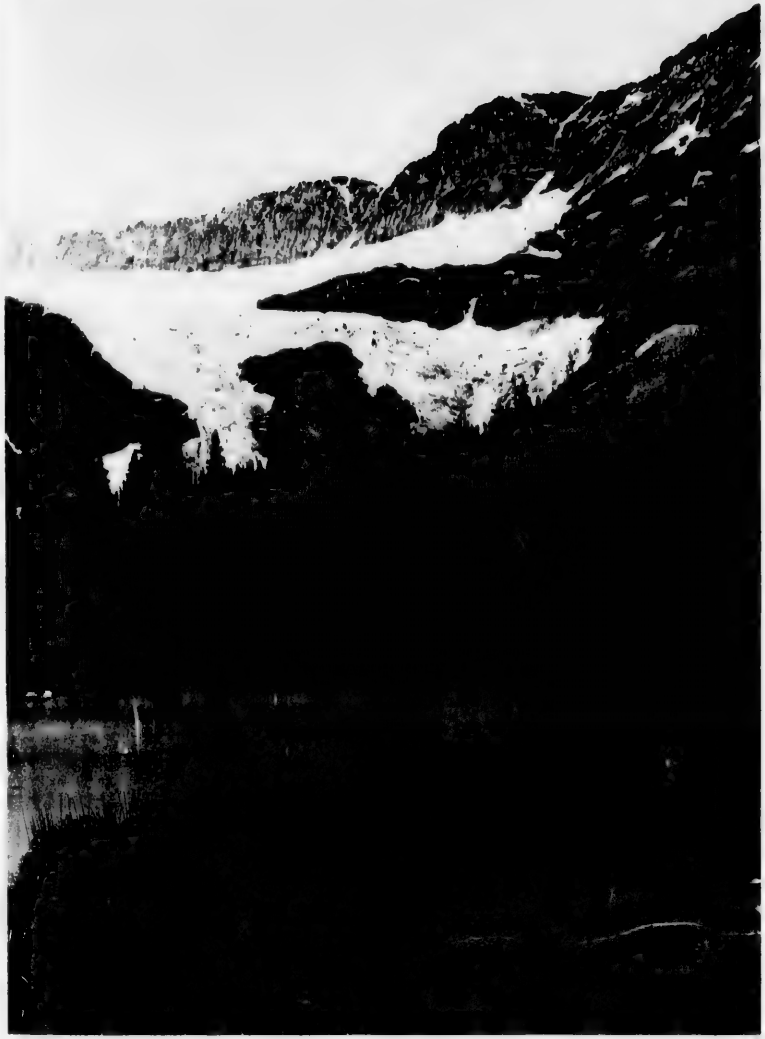
Above the first Bow Lake the river sweeps around the base of a long and partially isolated mountain, called, on Dawson's map, Goat Mountain, which is one of many others of the same name. The endless repetition of such names as Castle, Cathedral, and Goat mountains on the maps of this part of the world, shows among other things the form or nature of the mountains and the lack of imagination in those who gave the names. The altitude of the first lake is about fifty-five hundred feet. From this the valley ascends constantly, and the second lake is probably eight hundred feet higher. The green

timber commences near the lower lake and continues beyond the source of the Bow, which is about fifteen miles distant.

The approach to the Cold Water or Upper Bow Lake is full of interest. The trail leads out of a stunted wood into open moors, diversified by rock ridges and dry meadows in alternation. Above this comparatively level place a precipitous mountain stands on the west and shows a very fine escarpment which rises over three thousand feet from the valley. One of those glaciers, characteristic of this range, clings to the less precipitous parts of the cliff and descends in a three-pronged mass, resembling in outline the claws of an eagle. Soon after the open country is reached, the Cold Water Lake appears in the distance. In shape, size, and situation, it bears a striking resemblance to the Lower Bow Lake, but while the latter is comparatively uninteresting, the upper lake is one of the noblest and most beautiful of all those so far discovered in these Canadian Rockies.

We crossed a wide meadow which led by a gentle slope to the shore. The beauty of water, trees, and rugged mountains is here combined to make one of the most charming situations. Our camp was pitched on the border of a small lake, less than half a mile in length, which proved later to be a landlocked cove of the main body of water, and separated from it by a narrow channel. In the distance, through this connecting waterway, a glimpse

Upper Bow Lake.
Looking south.



of the larger lake appeared. Toward the east, the small lake, upon which our camp was placed, contracts into a shallow stream, which falls a few feet by a succession of gentle rapids and enters another lake about three-quarters of a mile long. This rests against the very base of the glacier-bearing mountain west of our camp. The shores of these smaller lakes are very beautiful and varied. In some places they are wooded rock banks, which rise a few feet above the water, and are partially covered with the drier kinds of mosses, huckleberry bushes, and various heaths. In such places the water is very deep, and though quite clear, has a dark appearance. Then, in other parts, the meadow lands come down to the water by gentle inclination and terminate in a low and sandy beach. Reeds and water sedges grow in the shallows opposite such shores, and their coarse leaves almost conceal the water by their luxuriant growth. The wind-swept grass of these swampy shores flashing in the sunlight adds another element of beauty to this interesting place.

For the purpose of fishing, we visited the narrows, where a deep channel connects with the main lake. The winding and irregular shores present a combination of swamp land, wooded banks and stretches of water, which wonderfully enhance the effect of the surrounding mountains. Opposite the narrow channel lies a long point of land partly dotted with small spruces and underbrush. It extends some distance into the lake and dissolves in a

chain of small rocky islands, some of which have only two or three trees upon them.

This lake is between three and four miles in length. The trail traverses the woods at some distance from the water to avoid a number of muskegs, which make the bank very unpleasant for travelling upon. The streams and springs spread over the mossy ground and, following no definite channel, convert the place into a muddy slough, which is very tiring to horses. We did better by walking along the narrow beach, sometimes, with our horses in the shallow water for half a mile or more at a time. The bottom is a fine, smooth gravel, however, and gave the horses an excellent footing.

We made camp about a mile from the upper end of the lake. Peyto came back to camp that evening with a five-pound trout which he had caught from the shore. A stream which may be considered the source of the Bow comes from a pass to the northwest, and enters the lake near the place where our camp was situated. Here we caught a number of bull-head or lake trout, but the largest weighed only two pounds. There are probably fish of very large size in this lake, and excellent sport could be enjoyed with a raft or a boat. During the last fifteen years this region has been almost unvisited. A large glacier is seen to the west. It sends a muddy stream into the lake, over a delta very similar to that of the lower Bow Lake. Peyto and I spent an entire day exploring

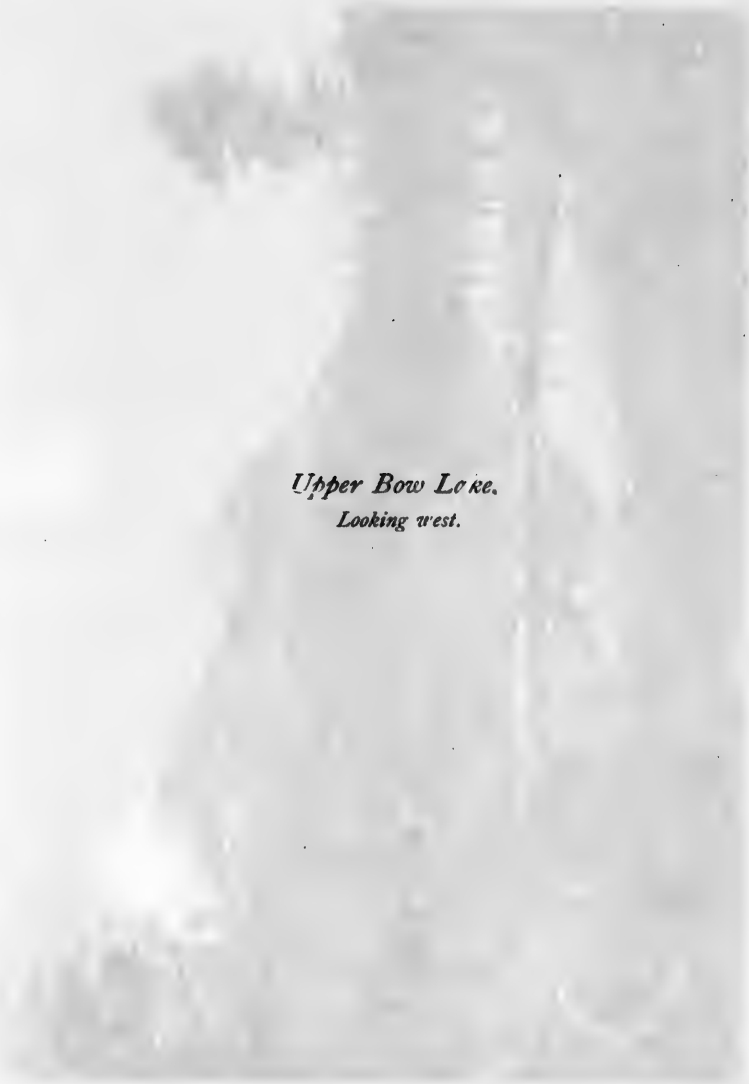
the glacier and its immediate vicinity. Not far from the glacier the stream flows in rapids, through a limestone canyon which is bridged in one place by a great block of stone about twenty-five feet long. The glacier has no terminal moraine, but comes down to a thin knife-edge on level gravel. The lower part is about half a mile in width, but it is a mile or two in breadth higher up, where it descends, from more or less continuous and extensive ice-fields, thirty or forty square miles in area.

Open, treeless moors, abounding in irregular mounds and depressions, covered with a scant growth of grass, stunted willows, and a dwarfed underbrush, extend in a gradually rising valley to a pass about three miles north-west of the lake. Woods border the valley on either side, but the lower parts, possibly because they are too wet, are bare of forest, and a broad and meadowy lane leads nearly to the pass. The pass itself is a delightful region sixty-seven hundred feet above sea-level. The broad valley slopes upwards in grand sweeps to the mountains east and west, and insensibly downward to the valleys north and south. Some very old spruces grow in scattered clumps or singly throughout pleasant meadows where myriads of mountain flowers make a bright colouring. Rivulets come from melting snows on the higher slopes or else burst from the ground in sparkling pools. One of these springs poured forth a constant stream of air bubbles, like a mineral spring. The trees are symmetrical, especially those that grow in the open,

and the place resembles a carefully tended park rather than a bit of the wilderness.

The view on the other side of the pass is one of the most inspiring in the mountains. The slope drops suddenly a thousand feet and discloses the entire length of Bear Creek valley, or the Little Fork of the Saskatchewan. This river takes its source in a fine glacier, enclosed by high and rough mountains, among which there are immense snow fields. From two arched caverns in the ice at the end of the glacier, a milky torrent issues, and after crossing a gravelly flat, enters a large lake which lies below your feet as you stand on the pass. This is Peyto Lake. Its blue waters are closely girt by a very densely wooded shore on every side. To the northwest a narrow valley stretches away in a straight line nearly sixty miles, which leads the North Fork and the Little Fork in opposite directions into the great Saskatchewan. The course of the Little Fork or Bear Creek is marked by a chain of ponds or lakes, which carry the eye away in a grand perspective.

During the times of railroad building, or more exactly, in the fall of 1884, James Ross, the chief of construction, sent a surveyor up the Bow River to ascertain if the Howse Pass would not be better than the Kicking Horse Pass, which seemed rather rough. About one week later, the surveyor sent back word that he had struck the Columbia River, thirty-five miles from the head of the Bow, with easy gradients and everything favourable for the



Upper Bow Lake.
Looking west.

railroad. The enthusiastic surveyor, however, had reached the main Saskatchewan River, which is fully fifty miles from the Columbia and on the eastern side of the range.

CHAPTER IX

THE ATHABASCA PASS — DAVID DOUGLAS NAMES MT. BROWN AND MT. HOOKER — COLEMAN AND STUART'S EXPEDITION — A NEW ROUTE PLANNED — OUR HORSES FALL IN A MUSKEG — DISCOVERY OF FIRE IN THE FOREST — TAMENESS OF A WILD BIRD — SURROUNDED BY BURNING TREES — CAUSES AND NATURE OF FIRES — EVIDENCES OF PREHISTORIC FIRES — WE REACH THE SASKATCHEWAN RIVER — INDIAN SUPERSTITION ABOUT THE NORTH FORK — THE STREAM DIVIDES — DIFFICULTIES OF FORDING RIVERS — SPLENDID WATERFALLS — EXPLORATION FOR A ROUTE — DISCOVERY OF A PASS INTO THE ATHABASCA COUNTRY

ABOUT one hundred miles north of the railroad lies the Athabasca Pass, famous in the early days of the enterprising North-west Fur Company. Alexander Mackenzie discovered in 1793 a pass across the Rockies by following the Peace River farther north, but the Athabasca and Yellow Head passes were apparently more popular, as they were in the line of general travel, and offered a route between the headwaters of the Athabasca and Columbia Rivers. In fact, no other passes were known across the Rockies in those early times. For many years two very high peaks, Mt. Brown and Mt. Hooker, were supposed to stand on either side of

the Athabasca Pass, and were believed to be the highest mountains in North America. Even to-day our best atlases place their height at about sixteen thousand feet. When Ross Cox, in 1817, was beating a retreat through this region, from the little colony of Astoria near the mouth of the Columbia, his motley crew, embracing many strange nationalities and characters, found themselves surrounded by all the grandeur of the Athabasca Pass. One of the *voyageurs,* after a long period of silent wonder and admiration, exclaimed: "I 'll take my oath, my dear friends, that God Almighty never made such a place."

The botanist, David Douglas, travelled through the Athabasca Pass in 1827 and gave the names and the estimates of height to Mt. Brown and Mt. Hooker. Of this region he writes as follows: "Being well rested by one o'clock (May 1, 1827), I set out with the view of ascending what seemed to be the highest peak on the north. Its height does not appear to be less than 16,000 or 17,000 feet above the level of the sea. The view from the summit is of too awful a cast to afford pleasure. Nothing can be seen, in every direction far as the eye can reach, except mountains, towering above each other, rugged beyond description. The majestic but terrible avalanches hurling themselves from the more exposed southerly rocks produced a crash, and groaned through the distant valleys with a sound only equalled by that of an earthquake. This peak, the highest yet known

in the northern continent of America, I feel a sincere pleasure in naming Mt. Brown."

The investigation of the true height of such mountains in a region of which there are only vague reports, has a fascination to the explorer, and in 1893 Messrs. Stuart and Coleman made a journey from Edmonton, by way of the Brazeau to the Athabasca, in an effort to solve the problem. They encountered great obstacles in the way of fallen timber, but succeeded, after heroic efforts, in reaching the pass. There they ascended one of the two mountains which were assumed to have such an unusual altitude, to within a short distance of the summit, and found that its height was only about 9000 feet!

The subject seemed worthy of further investigation, and in July, 1896, I started with Mr. R. L. Barrett with the purpose of visiting and measuring those mountains. In order to add interest to our exploration, the route chosen was by way of the Bow, the Little and North Forks of the Saskatchewan, which was practically a new country, and thence, if possible, by some pass available for horses to the Whirlpool River, which flows into the Athabasca. The success of our expedition depended on finding such a pass. We could get no information about the region, as no white man had been up there, and the Indians are very indefinite in geographical matters. Moreover, they have a superstition concerning the North Fork of the Saskatchewan, and never hunt in that country. We made preparations for a trip of at least sixty days,

and took five saddle-horses and ten pack-horses to carry our tents, blankets, and provisions. Our men were Tom Lusk, a Texan and an excellent packer, Fred Stephens, a Michigan wood-cutter, who acted as second packer, and Arthur Arnold, our cook.

We carried in our outfit, besides thermometers and aneroids, a steel tape for base lines, and a telescopic gradienter to measure vertical and horizontal angles, and an excellent camera.

We left Laggan on the twelfth of July, and in seven hours traversed all the burnt-timber country, which makes a ruin of this part of the Bow valley. Fred Stephens had been telling us of the terrors of muskegs among the foothills east of the mountains, where, he said, "a forty-foot pole would not reach bottom," but on the second day of our journey the muskegs of the Bow proved nearly as bad, if not worse. We had been trying to cross one of these in vain, and were beating a retreat. Barrett found a short cut across a narrow swamp, and said it was safe. Our horses followed, and before they had gone fifty yards, four of them were down in the bottomless swamp, with their heads and ears alone visible. We headed off the rest in time, and then rushed to the rescue of these poor beasts. They were all safely recovered after half an hour's work, but we had to make camp almost immediately in order to dry out the various packs that had gone under water. The accident, which seemed trivial at first, proved more serious when the amount of damage was fully

understood. More than half our entire supply of sugar had been dissolved, our tea and coffee soaked so as to lose their flavour, and most of our baking powder, which was to make bread of three hundred pounds of flour, was absolutely ruined. The next day we reached the Cold Water Lake, and from this camp, in order to sketch out this region, Barrett and I climbed Goat Mountain between the two lakes. We saw a column of smoke in Bear Creek and were apprehensive that a serious forest fire had started in that heavily timbered valley. To learn more of the state of affairs, we only advanced our camp to the summit of the Little Fork Pass, five or six miles distant. There it was plainly evident that a very extensive forest fire had started, and was sweeping up the mountains under the influence of a strong wind. There was no doubt in our minds that two prospectors, whom we had met a few days before, were responsible for the fire.

The apparent distance to the fire was about five miles. The next day Barrett and Stephens took saddle-horses and went down the valley to investigate. They returned late in the evening, much exhausted from the long trip, but reported that the fire was much farther away than it appeared, and that they had not reached it. This valley of the Little Fork is so straight, and is seen from such a height, that its length is very deceptive. There was a line of retreat possible to us by following a trail behind Mt. Hector into the Pipestone and then down the Siffleur to the

Source of the Little Fork of the Saskatchewan River.

Saskatchewan ; but this would involve a loss of nearly a week's time. It seemed better, if possible, to force a passage through the fire. So we descended into the Little Fork valley and made camp near the stream. While we were making this march an interesting incident occurred, which I will quote from my article on "The Sources of the Saskatchewan," which appeared in April, 1899, in the *Journal of the Royal Geographical Society*, and also in the *National Geographic Magazine* of the same month.

"As our horses were winding through a deep forest, a bird appeared which resembled a pine bullfinch, flitting from tree to tree and following us closely. Somewhat later, it gave the most remarkable instance of tameness that I have ever seen. Having followed us for about two miles, it waited in a tree during the bustle and confusion of making camp, but in the afternoon, when all was quiet, and some of our men were asleep, the bird became exceedingly familiar, walking on the ground near us and finally perching on our extended hands. It was soon evident that the object of our visitor was to catch mosquitoes, which were hovering in swarms around our heads. It pecked at a ring on my hand, at our needles, and in fact any metal article ; but the climax was reached when by accident the bird saw its own image in a small looking-glass which lay on the ground. Then, with extended wings and open bill, it uttered cries of rage and pecked madly at the glass in which an enemy appeared. Among the solitudes of mountain

forests, squirrels, finches, and whiskey-jacks often show unusual confidence in man, but this particular instance was remarkable, because the bird would alight on our persons even after it had been momentarily though gently detained several times as a prisoner in my hand.

"Further investigation showed that it was possible to get our horses through the fire, which had spent its energy on a large extent of green timber; so after three hours' travel from camp we came to the burning trees, where the fire was advancing slowly, as there was a calm. Then came several miles of the recently burned area, now changed to a forest of blackened sticks, some of which were already fallen, with here and there a column of smoke rising from smouldering moss, and everything half concealed in a snowy covering of ashes. At the other edge of the fire there was more danger, and frequently some tree would flash up and send a scorching heat toward us. We were chiefly anxious that the packs should not take fire and cause a stampede among the horses; so for a considerable distance we drove our animals along the edge of a lake and frequently waded deep in the water to avoid the heat of blazing trees.

"After an exhausting march of six hours we made our camp in a muskeg, or swamp, about half a mile from the fire. The wind, however, which had been increasing for a time, began to carry the fire toward us, and our situation soon became alarming when some heavy timber began to blaze and the columns

of flame, shooting hundreds of feet into the air, made a terrifying roar, which caused our horses to stop feeding. At one time a funnel-shaped whirlwind about two hundred feet high formed over the heated area and remained there a few moments.

"At the rate of progress the fire was making, we should soon have been surrounded had we not packed up and moved a mile farther down the valley. The second camp was made by the side of a considerable stream, wide enough to stop the fire; but toward evening cloud banners began to form at the peaks of the mountains, and next day, after many weeks of drought, rain fell steadily for ten hours and fortunately extinguished for a time the fires that were destroying this beautiful valley."

Forest fires have consumed about one-quarter of all the timber land in the Canadian Rockies. Such fires have of course been more frequent since white men have visited the country, many of whom have been indifferent about putting out their camp-fires, or have, as is often charged to prospectors, criminally set fire to these beautiful virgin forests for their own private advantage. Such indifference to the incalculable loss in the destruction of magnificent forests, and conversion of them into barren wastes of charred timber, is incomprehensible to the lover of nature. During the dry summer months, from the first week in July to the end of September, the woods burn easily, and the utmost care should be taken with camp-fires. Most of the forests are very dense, and consist entirely

of coniferous trees, their lower branches dead and seasoned, hung with grey moss and bristling with a multitude of dry needles. The rough tree trunks drip with balsam, and their scars are coated with accumulations of resin.

Forest fires usually progress slowly, the moss and underbrush carrying the fire along from one tree to another. As the fire catches among the dry branches of a fresh tree it sweeps rapidly upward with a loud roar and sends a sheet of flames one hundred and fifty or two hundred feet into the air for two or three minutes. After the branches and foliage have been consumed the fire smoulders for a long time. In light forests and a calm atmosphere such fires are not very dangerous, but where the trees are close and a high wind prevails, the flames leap from tree to tree in great tongues of flame. Sparks and brands carried heavenward by a furious draught, created in great part by the fire itself, start the flames in a thousand new places in advance of the main column and accelerate its terrible speed. Clouds of dense smoke and blasts of air, like the breath of a furnace, precede the flame and wither up the green vegetation in preparation for its burning. Fires sometimes travel forty or fifty miles an hour, and from them there is no escape for any living thing — man, the wild animals, and even birds all perishing together. Though the forests have been more frequently burned since the arrival of white men, there are abundant proofs that fires occurred

even before primitive man came among them. Traces of charcoal often appear where old trees have been uprooted by storm in a virgin forest. Charcoal may be found under the roots of trees near Lake Louise, some of which by actual count of their rings are three or four centuries old. I discovered a gravel bank near the station of Cascade, a few miles from Banff, which gave evidence of prehistoric forest fires. The river has cut under the bank and left a vertical face of clay and gravel, in which there are several thin layers of charcoal fragments, and under each a band of clay turned red by heat. These ancient fires were no doubt, as is often the case nowadays, started by lightning. After the forests have been burned over, the trees begin to fall and soon make hopeless obstacles to travel. A crop of purple fireweed, raspberries, willows, and other deciduous bushes springs up in a year or two in the dead timber. Young trees also appear very soon, sometimes growing spontaneously throughout the burnt tract, or else encroaching from the borders of the green forests. Pines replace spruce, and spruce replace pines almost invariably, and make a rotation of species. However, in some regions the altitude is too great for pine, and when the spruce forests are burned they necessarily replace themselves.

I will quote again from my article on the Saskatchewan as follows :

"We were now two days' journey down the Little Fork valley, a distance of about eighteen miles

in a straight line. We remained in camp the next day to do a little survey work from a mountain to the east. From this point, at an altitude of eight thousand feet, the Little Fork valley appears straight, deep, and comparatively narrow, with a number of lateral valleys coming in from the west side and cutting the mountain masses into projecting spurs. The strata of the mountains are for the most part nearly horizontal, and the cliffs are frequently almost vertical. There were six lakes in view from our survey point, of which two, each about a mile long, were merely expansions of the river, three were in lateral valleys, and one lay far up the valley where the river takes its source. The lateral valleys head in the summit range to the west and probably have never been visited.

"The scenery is very grand near the lakes. A striking peak about ten thousand feet in height, with a precipitous rock face and wedge-shaped summit, stands guardian over these lakes and, together with the jagged mountains near it, helps to give a gloomy, fiord-like appearance to the region.

"On July 22 we marched six hours, and reached the Saskatchewan River. The trail is very good, and runs for many miles through forests of splendid timber, especially in the great valley of the Saskatchewan. At the forks or junction the Saskatchewan is a rapid stream about 150 yards wide and apparently quite deep, and the pure blue waters of the Little Fork are soon lost to view in the muddy volume of the main river. The Saskatchewan valley is about

four miles wide at this point, the river itself flowing between bluffs of glacial drift, and while the massive mountains on every side are between ten thousand and twelve thousand feet high, they are less imposing than usual because of their distance. The main river runs about north-east, cutting through the mountain ranges, and taking its source to the south-west among the highest glacier-bearing peaks of the summit range.

"A very large tributary, which we called the 'North Fork,' comes in from the north-west and joins the main river about one mile above the Little Fork. This river is not correctly placed on Palliser's map, nor was there any available information about the region whence it comes. Even the Stony Indians who travel through these mountains know little of this river, because, it is said, many years ago one of their tribe was lost while hunting in that region, and they think he was destroyed by an evil spirit dwelling there. At all events, they will take no chances in visiting that part of the country now.

"Our route to the Athabasca, however, lay up this river, and our first duty was to find a ford across the Saskatchewan. A day was spent in finding a safe place, as the river was in summer flood, though not at its highest stage. Mr. Barrett, with characteristic energy, discovered a ford about one mile upstream, where the river spreads out among low sand islands to the width of nearly half a mile.

"

"A sense of relief came when, the next day, after fording the turbulent Little Fork, we had crossed the main river, which is of great size at this point, only thirty miles from its most distant source, and were safely on its north side. Turning northward along a high bluff, we came in a short time to the North Fork, which appears to equal the so-called Middle Fork, or main river. About one mile above its mouth the North Fork flows between rocky banks, and there is a fall or rapid in a constricted channel blocked by immense masses of fallen cliff, where the water surges in foaming breakers and dark whirlpools. For a mile or so above this fall there is a fine trail through a light pine forest, and then comes a burnt area with trees crossed in such confusion that it required two hours to make half a mile, and we were so much delayed here that our progress for the day could not have been more than three miles in nearly six hours.

"On the following two days we advanced about ten miles up the valley, having a trail wherever there were green forests, but suffering much delay from burnt timber and muskegs. On one occasion, when marching along a steep bank of the river, a pack-horse stumbled among loose logs and rolled over into a deep pool. The horse was carrying over two hundred pounds of flour, a burden that kept it for a short time at the bottom of the river, but after some violent struggles it came right side up and climbed out. No damage was done, however, as

flour absorbs water only to a slight depth, and very soon makes an impervious layer on the outside.

"Ten miles up the river a stream from the west unites with the North Fork. As the two streams are about equal in size, we were at a loss which one to follow in order to reach the Athabasca. In order to get a more extended view of the country, an ascent was made of a mountain which lies between the two rivers. On the summit, at an altitude of eighty-four hundred feet, it was seen that the western stream takes its source in a large glacier about twelve miles distant. A fair idea of the branch streams was given by the valley openings, but it must be confessed that less is known about this river than of any other source of the Saskatchewan under discussion. As a result of this ascent, we were firm in the belief that our route did not lie up the western branch. The other valley, however, seemed exceedingly deep, and canyon-like, in the very short distance that it was visible at all. Though the air was smoky from forest fires, in spite of considerable rainy weather of late, I tried some photographic work, and during a brief but fatal moment, when I was reaching for a plate-holder, the strong wind blew my camera over and broke it badly on the rough limestone rocks. The most fragile parts, the ground glass and lens, fortunately escaped, while the wood and brass work were in pieces. With a tool box carried for such emergencies, the camera was reconstructed after a few hours' labour, and did

excellent work later in the trip. Our men returned in the evening, and reported that there was a trail in the deep valley to the north-west.

"The next two days we advanced only about ten miles because of the uncertainty of the trails, the rough nature of the forests, and repeated crossings of the river. Our progress was slow, in spite of our custom of having one or two men explore and cut out the trail for the next day as far as possible each afternoon. In this place, the river is at the bottom of a narrow valley, the sides of which are smooth precipices, adorned here and there by clumps of trees clinging to the ledges. Streams and springs from far above came down in delicate curtains of spray or graceful waterfalls wafted from side to side by every breeze. The flood of glacial waters sweeps over a gravel-wash in a network of channels, with the main body of water swinging from one side to another of the valley and washing against steep or inaccessible banks. This condition of things caused us to cross and recross the stream almost constantly, and, though the fords were in general not more than three feet deep, the icy waters ran with such force that our crossings were not without excitement. In spite of the best judgment and care of the packers, our horses got beyond their depth several times and had to swim across. As the saddle-horses are guided by riders, they rarely lose their footing, but the pack-animals, coming along in a bunch, confused by the shouting of the men and the roar of the rapids, hesitate and

often enter the river a little above or below the best ford, and so get into deep water. Dangerous rapids or a log jam below make such occasions critical, not alone for the safety of the horses, but even for the success of an expedition in case a large quantity of provisions is lost. Pack-horses cannot swim very far with their tight cinches ; and moreover the icy waters of these mountain streams paralyse their muscles very quickly.

" The trail at length leaves the river, and makes a rapid ascent through forests on the east side of the valley, so that in an hour we had gained a thousand feet. Through the trees we caught glimpses of magnificent scenery : the uniting streams in the canyon bottom, the mountain sides heavily timbered or rising into snow summits, and to the west an immense glacier, which was the source of the largest stream. The North Fork was rapidly dividing into its ultimate tributaries. The sound of mountain streams falling in cascades, the picturesque train of horses, each animal cautiously picking a safe passage along the rocky pathway ; the splendid trees around us, our great height, and the tremendous grandeur of the mountain scenery, all helped to make our surroundings most enjoyable. Above the sound of wind in the forest, there was presently heard the roar of a waterfall, and half a mile beyond we saw a large stream apparently bursting from the top of a fine precipice and falling in one magnificent leap down a great height. Through a notch in the mountains, there was another fall visible

some miles distant fully twice as high as the one near us. It was learned later that every stream descended into the canyon by a fall and succession of cascades.

"We camped in a beautiful wooded valley with much open country at an altitude of sixty-three hundred feet above the sea. Near our tents was the river, which at this place is a comparatively small stream of crystal clear water. In the afternoon I ascended, with one of the men, a small mountain which lay to the west of our camp. From this summit two passes were visible, one five miles to the north and the other more distant and toward the north-west. The view to the west was more extended. There was a large straight glacier directly before us, the one we had seen earlier in the day, which supplies the greater part of the water of the North Fork. At least six or seven miles of this glacier is visible, and it may extend much farther behind the intervening mountains. The glacier has no terminal moraine, and slopes by a very even grade to a thin knife-like edge, in which it terminates.

"The next day Mr. Barrett went off to climb, if possible, a mountain over eleven thousand feet in altitude, north of our camp, while one of the packers and I started to explore the pass to the north-west. The other packer spent part of the day investigating the other pass. This division of labour was a great saving of time. At our conference that evening, which did not occur till midnight, when the last

member came into camp, it was decided that the pass to the north seemed unfavourable as a route to the Athabasca. Mr. Barrett failed in his ascent because the mountain was more distant than it appeared. The pass to the north-west was more favourable, and on the next day we moved our camp so as to be almost on the summit. The last and longest branch of the North Fork comes from a small glacial lake on one side of a meadow-like summit and at the base of a splendid mountain, a complex mass of rocky arêtes and hanging glaciers.

"Upon further inquiry we learned that the valley as it descended to the north-west was blocked by a glacier that came into it, and beyond that a canyon, which made this route altogether out of the question. A high valley on the right, however, offered the last and only escape for us, and after reaching an altitude of eight thousand feet our descent began into a valley that we knew must be either the Athabasca or the Whirlpool River, which flows into the Athabasca. Thus the most critical part of our expedition, the discovery of a pass from the Saskatchewan to the Athabasca, was safely accomplished."

CHAPTER X

WE ENTER THE ATHABASCA COUNTRY — SLOW JOURNEY DOWN THE WHIRLPOOL—REACH THE MAIN RIVER — GREAT VOLUME OF WATER IN THE ATHABASCA—TURN SOUTH AND REACH FORTRESS LAKE — SITUATION OF OUR CAMP—VIEW FROM A HIGH MOUNTAIN—BUILDING A RAFT — MEASURING MT. HOOKER — AN INTERESTING VOYAGE DOWN THE LAKE —MEASURING A HIGH MOUNTAIN TO THE WEST —A FOOT JOURNEY TO BASE OF THE GREAT PEAKS—FORCED MARCHES AND SHORT RATIONS

TO the south-west of the pass we had discovered was a group of very high mountains. They were dome shaped and covered with immense snow fields. We were now so far north that a hope was entertained that Mt. Brown and Mt. Hooker might be among them, but a rough measurement of one of the highest peaks gave an altitude of only 11,500 feet. A rugged valley lies among them and discharges a stream into the Whirlpool River. It is surrounded by cliffs on every side, and at the top there is an unbroken wall of glacier ice several miles in length in the form of a horseshoe.

We had now been travelling nearly a month, and on August 9th made our entry into the Athabasca country. On this date, sending our men and horses

ahead, Barrett and I remained behind in the hope of climbing a mountain to the north about ten thousand feet high. The weather, however, was squally, with frequent snow showers, while the higher mountains were concealed by clouds. At noon we gave it up and followed after our men, making a very steep descent of two thousand feet into the Whirlpool valley. Violent gusts of wind made the forests roar, and carried clouds of dust over the gravelly valley bottom. The scenery in this region is magnificent.

On the 10th we marched down the valley in a north-westerly direction. On one occasion, while debating the best route, some of our horses commenced to drink at the river edge, while the others crowded them into the water, whereupon they all swam across. They then began to graze unconcernedly on the other side. It was some time before we could find a ford, and then we travelled a long distance on that side, for the country was as open as on the other. I ascended to the top of a mountain about three thousand feet above the valley in the afternoon. From this I saw that the Whirlpool valley turned slightly to the west between two long and monotonous ridges, and was much disappointed to learn that it was at least twenty miles farther to the main Athabasca.

August 11th. We marched five hours down the valley through a desolate region of gravel washes where the river flows in many channels. The burnt timber is mostly standing and easy to travel, but

uniform and unbroken ridges on either side of the valley made our progress seem painfully slow. We found great numbers of wild strawberries and saw many bear and moose tracks. The cold weather of the last ten days had lowered the rivers suddenly.

August 12th. The weather is clear and fine. Marched five hours and made good headway, as the Indian trail is well defined and the country pretty open. We saw a bear and two cubs across the river, and Barrett killed one of the cubs at long range. The old bear got away, however. After camp was made I ascended a mountain to the north, and got a fine view, seeing the main Athabasca at last to the north-west.

August 13th. We were now on Coleman and Stuart's trail, as they had come into this valley by following a stream which enters from the east. They had done an immense amount of cutting in the fallen timber, and must have been greatly delayed. Many trees have fallen since, and we had two men chopping all the time. We got on the wrong trail after a two hours' march, and made a vain attempt to cross the river, but were finally compelled to pitch camp so as to spend the afternoon in a reconnaissance. The Whirlpool River has gained an immense volume of water within the last ten miles, though no streams of large size have entered it. The river is a roaring rapid, fifty yards across and three feet deep. The bottom is made of large quartzite boulders, a yard or more in diameter and smooth as glass. No horse can stand among them or even walk along the shore.

We found it impossible to cross, because in event of a horse falling in midstream there would be no possible escape for the rider. In the afternoon our men found a ford near the junction of the Whirlpool with the main Athabasca.

August 14th. After exasperating delay and trouble in fallen timber we were compelled to give up Stuart and Coleman's trail. In six hours we reached the Athabasca River. The heat was very great and myriads of grasshoppers rose in clouds as our horses tramped along through the burnt timber. The country is overrun by a small growth of pines which have been repeatedly killed by fire. The slender, pointed poles lie crossed in every direction and are very trying to the horses, as one end often flies up and prods the horse, thereby making the animal jump and run in terror.

We got our first view of the great muddy Athabasca from the top of a level terrace, of which there are three in this valley. We descended a steep bank near the junction of the Whirlpool and Athabasca. As we approached the ford a large raven circled over our heads, croaking dismally. We got across safely in spite of the ill omen, and made camp in a small patch of green timber. Our altitude here, according to the aneroid, was only thirty-eight hundred feet. Though it is difficult to estimate relative volumes of water by the eye alone, it was evident that the Whirlpool River is probably only one-fourth the size of the Athabasca.

On August 15th and 16th we turned due south and followed the main river, marching six hours each day. There was no trail, and we made our way as rapidly as possible through burnt timber, where, however, most of the trees were standing. Barrett and I went ahead and quickly selected a route while the men urged our horses along at a fast pace. Thus we plunged along through ravines, up and down steep banks, and around impassable wind-falls, but were frequently brought to a halt and compelled to cut through heavy timber.

On the second day we crossed a large stream which comes from the south-east and runs about parallel to the Whirlpool River, from which it is separated by a single ridge of mountains. The water was three and one-half feet deep and the stream was seventy-five or one hundred yards across. This river is nearly or quite as large as the main river, which we continued to follow. Short pieces of an old Indian trail now appeared along the bank. In about three hours after crossing the large branch from the south, we came to a large lake, called by Coleman and Stuart, "Fortress Lake." The Athabasca is not more than half a mile distant. This lake lies in a valley running east and west, or nearly at right angles to the Athabasca.

This was the termination of our journey with horses, which had required twenty-six days' marching to accomplish. Ten days besides had been consumed in various delays, incidental to forest fires, finding

FORTRESS LAKE, LOOKING WEST

fords, and exploring valleys and passes through the wilderness, parts of which were absolutely unmapped and untravelled before our expedition. At Fortress Lake we were so near the Athabasca Pass that any mountains, such as Brown or Hooker, could be seen and measured from the neighbouring heights. It remained now to lay out a base line and commence triangulation of the surrounding region, but before referring to this work, a brief description of the neighbourhood is in order.

Our camp was in a grove of spruces near the lake. The shore is flat and rather swampy, while the water is shallow for some distance and very much crowded with a mass of water-worn tree trunks. Some had been stranded on the shore at a time when the lake level was considerably higher, and others, having become water-logged, were sunk in deeper water, where they fairly covered the bottom and projected their bare branches and grotesquely shaped roots above the surface. The lake is about one mile wide and apparently very long. I calculated the distance to a sand-bank down the lake to be five and one-quarter miles. A very imposing mountain lies on the south side of the lake, and another on the north rises more than five thousand feet above the water. But where were Brown and Hooker? Straight before us to the west, a massive glacier-bearing peak seemed at first as though it might answer for one of them. It was in the right place to be very near the Athabasca Pass, and though its height did not seem

great, the amount of ice which covered its entire east face and its distance may have deceived us.

On August 17th Barrett and I set out to climb the peak north of the lake in order to discover the location of the highest mountains. We had a long and tiresome walk, through a heavy forest, and discovered a very old trail, so much blocked, however, by fallen trees as to be almost useless. After reaching a point about forty-five hundred feet above the valley, the weather became threatening, and I set up my camera at once and took a set of views around the horizon. The clouds formed constantly a few yards above my head, but I got the distant mountains, though the smoke and gloom made the results very poor. Barrett continued up the mountain, though the climb involved some rather perilous work among rotten limestone cliffs. He reached the summit, which is about ninety-six hundred feet high, where the clouds shut out everything from view. From my point, I could see an immense glacier, the source of the Athabasca, ten or twelve miles to the south. The clouds opened a moment and disclosed what appeared to be by far the highest and finest peak that I had seen on the entire journey, ten miles to the south-west. It was a wedge-shaped peak, rising from a very long and precipitous wall of rock, which seemed to be over ten thousand feet high.

The next two days Barrett and Stephens were occupied in building a raft, on which we hoped to

reach the other end of the lake. The sound of their axes was continually heard among some well-seasoned dead trees, about a quarter of a mile down the shore. While this work was going forward, I measured a base line. The only level place of any length proved to be in the lake itself. I laid out a line of stakes in eighteen inches of water and set up my gradienter at either end. It was bitterly cold work in ice-cold water. From my first short base line I calculated a longer one, and then found the distance of the high mountain, which we supposed might be Mt. Hooker, to be a little more than seventeen miles. The working out of the final logarithms to get the height was very exciting, and everyone waited impatiently, as I added up the final figures. "Well, the mountain is over twelve thousand eight hundred feet high, anyway," said I, much pleased at the result, which would make this the highest measured mountain in southern Canada. The excitement of the calculation must have been too great for accuracy, however, as I found a moment later. In wandering around among tangents and sines, I had gotten in the wrong column somewhere, and after a hasty revision, Mt. Hooker fell twenty-three hundred feet and came down to ten thousand five hundred feet never to rise again, and our enthusiasm fell with it.

Meanwhile Stephens and Barrett had built a fine and seaworthy raft. Leaving Tom Lusk in charge of our main camp, on August 19th we piled our luggage on the raft and commenced a voyage to the other end

of the lake. The raft was built of about ten large logs, fifteen feet long, firmly bound together with ropes, which, shrinking in the water, became very tight after a short time. Branches were laid crosswise to keep our blankets and provisions above the water, and this pile of stuff made a place for two of us to sit upon. The other two sat on boxes forward. Each of these managed an oar which had been roughly hewn by Fred Stephens. Some crosspieces nailed together and to the side of the raft with steel spikes, which we had brought for the purpose, made oar-locks. Our raft, with four of us, carried a burden of more than a thousand pounds. Many speculations were made as to the time that would be required to reach the other end of the lake, and these ranged all the way from six hours to three days. After saying farewell to Tom Lusk we sailed at 6.40 A.M. Our plan was for two men to row in alternate turns of exactly thirty minutes. The heavy raft moved with surprising and pleasing speed, as the logs were pointed at both ends. We made a straight course and kept near the south shore as a protection against the wind. The water of this lake is very clear, but there were a number of small cray-fish to be seen as we went along, and I have observed that this is usually a sign of the absence of fish. It is indeed a surprising fact that this splendid body of water has no fish. It is only forty-two hundred feet above sea-level and abounds in food, for we saw thousands of moths and grasshoppers floating on the water.

The scenery is very fine, and those of us who were not engaged in rowing had an opportunity to study the forests and mountains on either side of the blue lake. In about three hours we passed the mouth of a large stream, which comes from a glacier several miles south of the lake. A wind sprang up about ten o'clock and roughened the lake, but we were well protected by staying close to the shore, while on the opposite side, we could see the white-caps running. Sometimes our course led us very close to the rocky shores, which were covered with a growth of immense spruces, or in places, where snow-slides had swept the forest away, there was an impassable jungle of spreading alder, willow, and birch bushes. Our steady progress was a constant source of delight, when we thought of the infinite obstacles an overland scramble on such a shore would have presented.

After the fourth hour of rowing we approached a small island having a single tree upon it. We passed through a narrow channel between it and the shore. Here the lake makes a turn to the left, and so brought us against the full sweep of the wind, which was driving a heavy surf through the narrow channel between the island and the rocky shore. It so happened that Arnold and I had just finished our half-hour of rowing and should have changed, but the wind and sea had become suddenly so rough that it seemed perilous to move around. In fact, for a time, we were a little doubtful how the old raft

would behave The waves swept over her decks, but, fortunately, could not reach our luggage, which was on an elevated platform. The end of the lake now appeared not more than a mile and a half distant, and as we approached, the water became quieter. After five and a quarter hours of rowing our trusty craft began to glide through a growth of water-weeds and rough equisetums, and finally scraped upon the sandy shore of the western end of Fortress Lake. We were delighted with the place, which was a hard, level bank of gravel, covered with an open growth of evergreens.

Circles of Dryas, a rosaceous plant, which spreads over the ground from a common centre, and puts forth a margin of leaves and blossoms at the outer edge of the circle, covered the gravelly ground. We caught a number of small frogs and fried their legs for luncheon. In the afternoon, I laid out another base line in the lake as at the other end, and continued survey work on the nearer mountains.

It rained hard in the night, and though we had no tent, and were sleeping on the ground, we managed to keep dry by covering ourselves with rubber and canvas sheets. The weather was so thick with smoke and clouds that nothing could be done in survey work the next day, and it looked as though we should be defeated in this purpose, as our time was limited by our provisions, both here and at our main camp.

Friday, the 21st, fortunately broke clear and calm.

FORTRESS LAKE, LOOKING EAST

Arnold and I took the raft and rowed to a point on the north shore of the lake, and then ascended a mountain 8450 feet high. I carried my camera and surveying instruments. On the summit of this mountain, which is a long ridge, I built two cairns about half a mile apart and took angles on the high triangular peak to the south and also on Mt. Hooker. The amount of work necessary in signalling, building cairns, which should be visible from the valley, taking notes of angles and photographing, delayed us, so we did not commence our descent of four thousand feet until half-past six. We narrowly escaped being overtaken in the woods by darkness, but reached the raft just at nightfall.

I spent the next day triangulating the two cairns on the summit of the mountain we had climbed. My final results gave me 11,450 feet as the height of this peak, which is higher than all others within a radius of many miles. The other high mountain, which we supposed to be Mt. Hooker, proved to be 10,505 feet. The results from the two short base lines at a distance of nine and seventeen miles showed a difference of less than two hundred feet between them. The results were based on a height of 4175 feet for Fortress Lake, which depended on comparisons of my two aneroids, with simultaneous observations of a mercurial barometer at Lake Louise, one hundred miles distant.

On the 23rd, Barrett and I left camp in a final attempt to see and photograph these mountains from

a nearer point, and for this purpose we set out down the Wood River valley. We crossed the Wood River, a swift, clear stream, which comes from Fortress Lake, and we had all we could do to keep our footing. A larger, muddy stream comes down a side valley, less than a mile from the lake, and joins the Wood River. After that it was impossible to cross and we remained on the south bank. We walked about eight miles down the valley, and encountered in some places a jungle, very similar to those of the Selkirks. The Oregon grape and mountain ash, which are characteristic of the western slope of the Summit Range, were abundant, and even the prickly Devil's Club appeared, much to our regret. There was no path except one about six inches wide, and no blaze marks on the trees, so that this is, in all probability, nothing but a game trail. We reached a place at length where the Wood River begins to descend into a canyon. Through a valley to the south, the great triangular peak rose, dimly outlined in the smoky air, but making one of the grandest mountain views that I have ever seen. Because of our low altitude, this peak rose nearly eight thousand feet above us. May not this be the secret of Douglas's false estimates on Brown and Hooker?

We reached camp at one o'clock, and made luncheon of corn-meal, bacon, and stewed apples, which were the last provisions we had. Our men had rigged up two poles on the raft, and were prepared to stretch a large canvas sheet between them. In a

stiff wind we set sail and made wonderfully rapid time down the lake, which is about eight miles long, so that we reached the lower end in three and three-quarters hours without the use of oars.

We had now been out forty-four days, or three-fourths of the time for which our provisions had been calculated. Moreover, in the accident to our horses in the muskegs of the Bow, much of our food had been destroyed. An anxious calculation was made of every article of food left, and though we had required five weeks to reach this place, we found provisions enough to last us only fourteen days. Two meals a day, and light ones at that, were the regulations put into effect at once. We marched from four to seven hours every day for the next thirteen days, and reached the Upper Bow Lake, where, to our great joy, we met a party of friends, from whom we procured a number of luxuries, of which we were in great need. Barrett here left me to join the other party in a trip behind Mt. Hector to Banff through the headwaters of all the streams entering the Bow from the north, an interesting journey of about seventy-five miles, which I had made some years before. After having been two months in the wilderness, I reached Laggan on the 8th of September while the first autumn snows were falling.

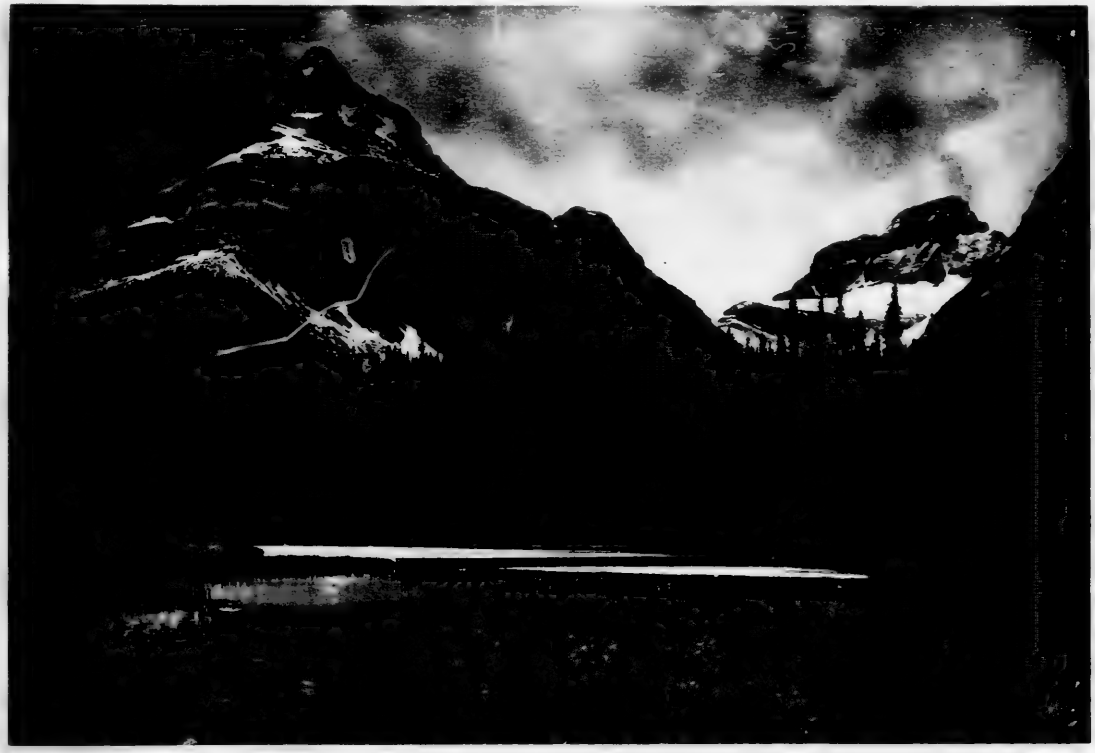
CHAPTER XI

A WINTER TRIP TO THE SASKATCHEWAN — GLACIER LAKE — AN EXHAUSTING SNOW CLIMB — VIEW OF MT. FORBES — ULTIMATE SOURCES OF THE GREAT RIVER — THE HOWSE PASS — DESCENT OF THE BLAEBERRY — AN ANECDOTE OF THE PIONEERS — DESPERATION CAMP — PITIFUL CONDITION OF OUR HORSES—HEAVY SNOWFALL AND A WINTRY CAMP

OF the headwaters of the Saskatchewan there remained but one tributary to be explored. Owing to an attack of typhoid, my plans to visit this region in the summer of 1898 were postponed till late autumn, in fact when winter had virtually commenced. For this trip I had nine horses and engaged Bill Peyto and Roy Douglas.

"It seemed almost foolhardy," to quote again from my article on the Saskatchewan, "when on October 12th, against driving snow showers and a cold wind, we set out from Laggan and once more resumed our toilsome march through the many miles of burnt timber northward, as it were, into the very teeth of winter. Through constant snow-storms — for the headwaters of the Bow are a breeding-place for bad weather — we passed the Upper Bow Lake, the divide beyond, and got six miles down the Little Fork on the third day, as a result of forced marches.

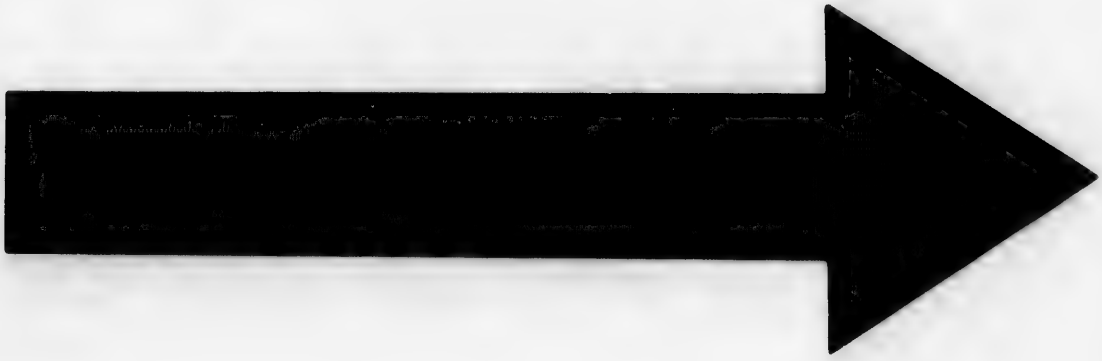
Storm in Little Fork Valley.

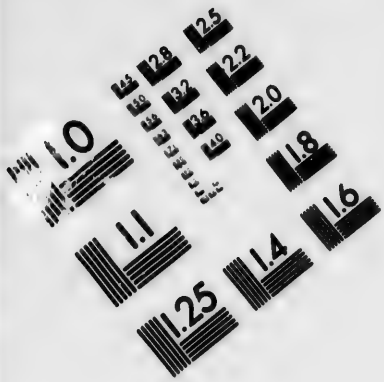


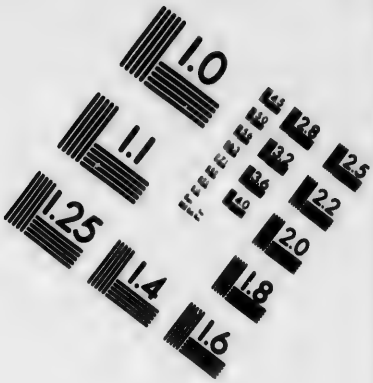
During the following night there was a curious creaking sound of the tent rope and a sagging of the canvas, and in the morning our prospects for a successful trip were very gloomy indeed, with ten inches of new snow on the ground. Not wishing under these circumstances to get farther away from civilisation, we remained in camp all day. By afternoon the snow ceased, and the next day we were again on the march. The snow was fifteen inches deep in the Little Fork valley, but only half that depth near the Saskatchewan, which we reached on the sixth day.

"On October 18th we crossed the Little Fork and turned westward into a region that promised to be full of interest. The weather, which had been cloudy and threatening for some days, now gave signs of improvement by the appearance of blue sky in the west, and soon after the high mountains up the Middle Fork were bathed in sunlight, the dazzling light on the snow-covered landscape being very cheering after the days of gloom and storm. The trail penetrates a forest on the south bank and, frequently coming out on the river, allows views of the wide, log-strewn gravel-wash, the work of summer floods.

"About five miles up the river a valley comes in from Glacier Lake, and our camp was placed on a point of land between the confluent streams. The Saskatchewan at this cold season is clear as a mountain spring and shallow enough to be fordable on foot. In summer, however, it is a raging flood that







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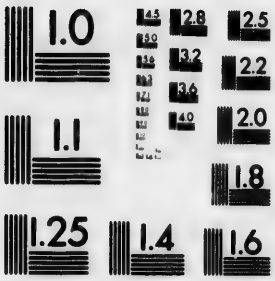

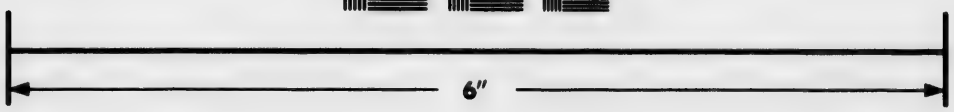

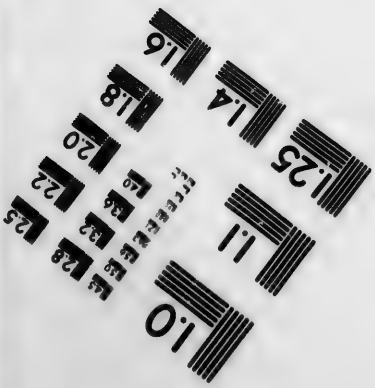

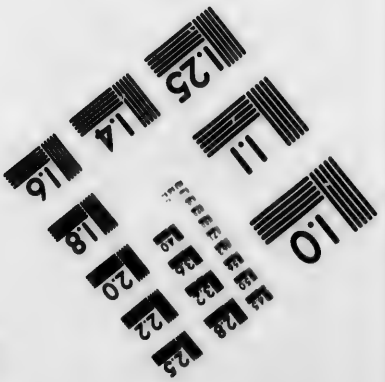

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makes the region of Glacier Lake very difficult to reach. From our camp I set out in the afternoon to see the lake, and found it in an hour, though not without a hard scramble through deep snow and fallen timber. The view was well worth the labour expended. The lake, which is three or four miles long, is beautifully set among high peaks, and at the farther end a snow mountain sends down a glacier nearly to its level. The setting sun, sinking into a notch of the distant mountains, poured shafts of light through grey, misty clouds and tinged their edges with a pale-golden illumination. The lake was nearly calm and reflected the beautiful picture of mountain and sky from a tremulously moving surface. The water, by retreating from its summer level, had exposed a wide margin of mud-covered boulders and slippery logs—the trunks of trees carried into the lake by snow-slides,—but in the distance the forested banks seemed to press close upon the water. There was something wonderfully impressive in the awful solitude of such a scene under the spell of evening calm.

"From what had been seen of the country I decided that it was important to reach, if possible, the summit of a high mountain that lay to the east of the lake, which from its position would command a comprehensive view of the whole region and also surely reveal Mt. Forbes, which was somewhere west of the lake, according to Palliser's map.

"Accordingly I was afoot the next morning at nine

o'clock, with a camera on my shoulders, ready for the ascent. The mountain appeared to be about seventy-eight hundred feet in altitude, or in round numbers three thousand feet above our camp. The weather was bright and cold, nor was there a cloud in the sky, and it proved by far the best day of the trip. It appeared that the walking would be better on the other side of the Glacier Lake stream, and after some ineffectual attempts to bridge the river by felling trees. Peyto carried me across on his back in a shallow place, and so the climb was commenced with dry boots. In less than five minutes a fine trail appeared, which saved a great deal of labour and considerable time in getting to the lake. The trail at length diverged to the east toward the mountain and went in the right direction until the altitude was six hundred feet above the lake, effecting a great saving of energy in forcing my way through the underbrush. The sunlight was painfully brilliant on the snow, which was fully a foot in depth at seven thousand feet. At this altitude, in a last clump of spruce trees, I hung my camera to a branch and took a short rest, as the climb so far had been very exhausting.

"After a pause of ten minutes the sharp air urged a recommencement of the ascent. The brilliant glare of an hour previous had given place to a somewhat cloudy sky, as a belt of heavy cirrus was drifting along over the mountains in a great line running north and south. The sun shone through it feebly,

and was surrounded by a halo. I soon began to have doubts of my ability to succeed in the ascent, as my strength began to fail under so much exertion in the deep snow. The bushes, rocks, and other inequalities of the ground were buried, so that I frequently stumbled and fell. Moreover, it now became apparent that the size of the mountain had been much underestimated, for the heights on the right rose tremendously even after an altitude of seventy-five hundred feet had been reached. The inclination was very steep, and the glare of the now returned sun on the vast expanse of snow, and the absence of anything to fasten the eyes upon for relief, produced a curious sensation of dizziness, due perhaps in part to exhaustion. I felt, however, the importance of reaching the summit, as it meant practically the success of the entire trip. Moreover, the extraordinarily fine weather on this critical day of the trip seemed too providential to be lost from any lack of exertion or ambition.

"Summoning, then, all my resolution, I made reasonable progress for a time, but soon, in spite of every eager desire for success and ambition to reach the summit, the contest between will-power and tired muscles became doubtful, as the snow grew deeper with higher altitude, the slope steeper, and the far-off summit seemed no nearer. Every few yards of progress was invariably terminated by a fall in the snow, and it seemed better to rest for a moment in whatever position chance had it than to get up at once.

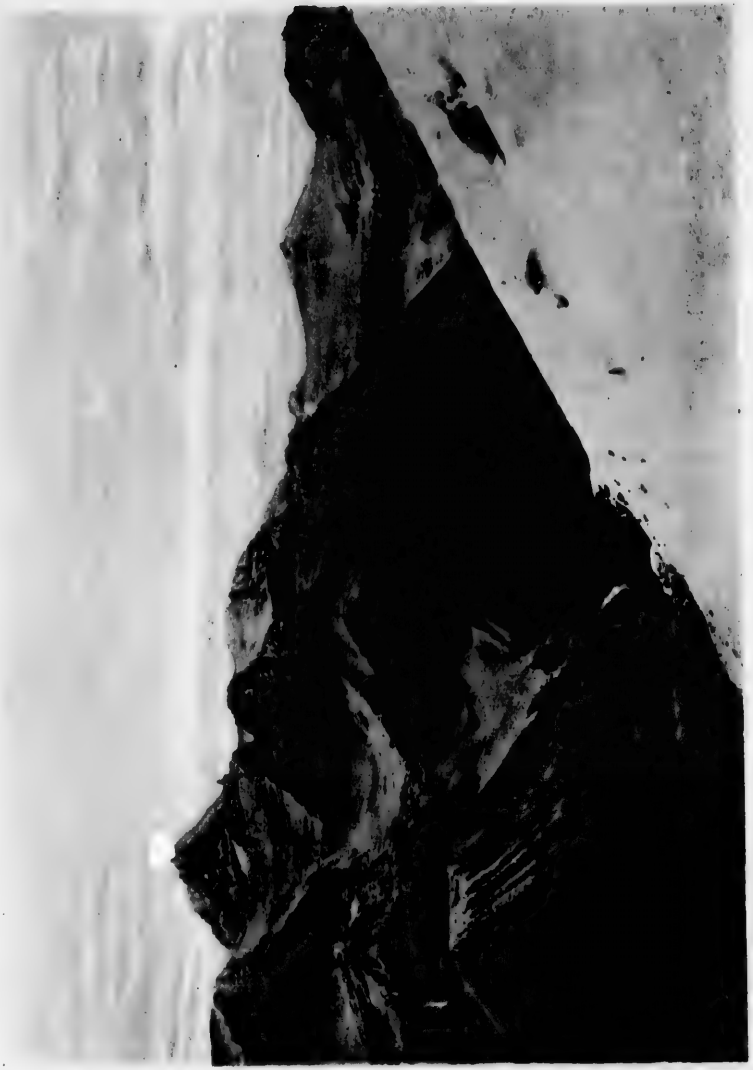
"A little later a view appeared that in itself well repaid the labour of the climb. On the right was an expanse of spotless snow, exceedingly steep, vast in extent, and dazzling in brilliancy. Its rounded contours were sharply outlined against the sky, but there was no interruption of stone or cliff in the monotonous covering of snow, nor any scale by which to judge of size or distance. The chief object of interest in the view was a snowy, triangular peak covered with ice, which now began to appear in the west. The colours of rocks and cliffs in the distant peaks and precipices seemed absolutely black in contrast with the remarkable whiteness of the snow surface on all sides. Overhead the sky was intensely blue, but marked by distinct wisps of white cirrus cloud, spun out like tufts of cotton into shreds and curving lines.

"At an altitude of eighty-eight hundred feet, or more than four thousand feet above our camp, I at length reached the summit of the mountain crest. It was necessary to walk along the crest a quarter of a mile to reach a somewhat higher point, which was the true summit. The snow along this mountain ridge was in many places three or four feet deep, and, mindful of the terrible Alpine accidents caused by cornices, I kept well away from the edge, below which it seemed to drop sheer several thousand feet. From intense frost my gloves were frozen so stiff that notes and sketches had to be done with bare hands.

"The most conspicuous and interesting part of the

whole vast panorama was the lofty summit of Mt. Forbes, beyond the valley of Glacier Lake. This mountain and another about ten miles to the west were the two highest peaks in sight, and each is probably between thirteen thousand and fourteen thousand feet in altitude. Glaciers of very large size come from these mountains and terminate a few miles above the lake. The whole valley of the Saskatchewan to its upper end and in the opposite direction for many miles below the mouths of the North and Little Forks was clearly visible. There was a very high rocky peak in a group of mountains east of the Little Fork that occupies the position of Hector's Mt. Murchison, which he calculated to be 13,600 feet high. This mountain is hidden away in a group that must be seventy-five miles in circumference, and so it is rarely seen. There was a fine view to the north, where a wild and desolate valley, thousands of feet below, was dominated by a castle-like mountain over eleven thousand feet high, cut in ruins like ancient towers and battlements. Of four plates exposed on this mountain only one was successful, so I had a narrow escape from failing altogether in getting a view of Mt. Forbes, which, because of its great height, is veiled from view by clouds and is frequently invisible for weeks at a time.

"On Thursday, October 20th, the day broke grey and unsettled, with the highest mountains touched by clouds. We continued our march up the



MT. FORBES FROM SURVEY PEAK (8000 FEET)

Saskatchewan valley, and urged the horses rapidly over a level gravel plain at such speed as to make in all ten miles. On the west side of the valley there is a stupendous wall of rock between eleven thousand and twelve thousand feet high, which terminates in the giant peak of Mt. Forbes, a little to the north. About four miles from our camping place there is a group of curious rounded hills rising like forested islands from the sea of gravel.

"There was a strong raw wind against us, and because of our water-soaked boots, half frozen by contact with snow, it was altogether too cold to keep in the saddle long, and everyone walked most of the time. We made camp in a miserable place of stunted timber half killed by gravel which had been washed over the place by some change of the river's course not many years before. The river here divides into three streams. The smallest, near our camp, comes from the Howse Pass, less than three miles distant; the other two come from a valley to the south-east, each, curiously enough, flowing on opposite sides of a flat valley. In the afternoon I walked some three miles up the valley to where the lesser stream comes in from the west, and as it heads at the base of Mt. Forbes, I followed it a mile or so farther, till presently the current became rapid, the valley narrow, and the water closely hemmed in by rocky banks, so that walking was very difficult. The snow was a foot deep in this little valley, where the sun and wind could not exert

their influence as in the open. The stream on the other side of the valley is larger and comes from a glacier several miles distant. This whole region was very thoroughly examined last summer by Messrs. Baker, Collie, and Stutfield, who not only explored the large glacier, which is supposed to be ten or fifteen miles long, but went up the other stream several miles to the base of Mt. Forbes, in the hope of ascending it. The flood of waters that sweeps down here in summer from the long glacier has cut channels three or four feet deep, lined with immense boulders, across the whole bottom of the valley. This is the chief stream or source of the Saskatchewan.

"During the night the wind came up in fitful gusts; the stars were no longer bright points, but foggy spots seen through a thin mist; bands of cloud swept along the mountain sides almost as low as our camp, and at length the whole sky was overcast. The barometer was much lower at midnight. By 1 A.M. snow began to fall, which was a cause for no little apprehension, as we were far from the railroad.

"On Friday, October 21st, the sky was still threatening, though very little snow had fallen. We were on the march soon after ten o'clock, and reached the summit of the Howse Pass in an hour. This pass was made known to the traders of the North-west Fur Company about 1810 by a man of the name of Howse or Hawes, and was at one time much used by the Kootenay Indians, who came over the mountains

and bartered with the fur traders at a place about three days' journey down the Saskatchewan, now known from this circumstance as the Kootenay Plain. This route is now impassable, as fire has run through the forests in the lower part of the Blaeberry valley, and the timber has fallen for many miles. The pass itself is about eighteen miles from the Little Fork and fifty-three hundred feet in altitude.

"At this point we were seven days' journey from the railroad by either of two routes,—the one by which we had come, or another, which, by going down the Blaeberry one day's march and then over a pass to the south-east, would bring us to the Kicking Horse River, and so to Field, in British Columbia. The latter route seemed preferable, as it would be through a new region.

"The descent into the Blaeberry is one of the most trying exploits that the mountains offer. We commenced to descend rapidly the channel of a brawling mountain torrent, crossing from side to side constantly, so that our horses were compelled to climb up and down steep banks, to scramble over immense logs, or sometimes to force a way down the boulder-strewn bed of the stream. As there was no trail, Peyto had to lead the way by whatever route appeared best, and in several places our horses had to slide on their haunches down steep banks forty or fifty feet high, jump into the torrent, cross it, and then ascend a similar bank on the other side at the greatest risk of accident and to the no

little trial of our own nerves. A trail appeared after three hours of such labour, and we camped about ten miles down the valley. It rained hard all night, turning to snow in the morning."

This Blaeberry River flows west to the Columbia, and was formerly much used as a route across the mountains. In 1882, when parties were still exploring for a good railroad pass across the range, Tom Wilson was sent on foot up the Bow to the Saskatchewan and thence by the Howse Pass down the Blaeberry. This trying feat was only accomplished after the last morsel of food was eaten on the road and his clothes torn in the burnt timber. Again in 1887 Wilson took two gentlemen on a hunting trip into the same region and tells the following story of their adventures :

"We lost our axe and got caught in heavy windfall, where we had a very rough time, as no other party had been over the trail for years. On one occasion, to get around some bad timber, we had to cross along a steep slope at the top of a cut bank, where, if a man or horse rolled into the river he was gone, as we were only a few feet above a narrow canyon. I unsaddled the horses and led them over one at a time. After the horses were safe, the two hunters followed. The last was almost across when his feet slipped from under him. He gave a yell and grabbed a root that was sticking out of the bank. He was stretched at full length and his arm was extended so that he had no chance to pull himself up.

The rough gravel would have held him even if he had lost his grip on the root. So at first we laughed at him, but seeing the look of terror in his face I shouted 'You are all right. You can't slide down there.' 'Who is trying to slide?' said he. 'Bring a rope.'"

A few weeks before my own trip, Messrs. Collie and Baker had discovered a pass out of this Blaeberry valley. It was our purpose to follow it, and under Peyto's guidance we turned up a small stream which enters from the south. A rough scramble over boulders and gravel was followed by an exceedingly steep ascent of a wooded slope. Snow lay on the ground in shaded places, and as we ascended it became deeper. It was fifteen inches deep after we had climbed twelve hundred feet. Our bearings were by compass, as storms during the day shut out any view of the mountains. By nightfall we were nearly at tree-line and found ourselves surrounded by unbroken forests. No suitable place for a camp could be found on the mountain side, and in desperation we unpacked our horses in thick woods. Our poor horses were turned loose in deep snow where there was nothing to eat. Avalanches of snow fell from the trees at every stroke of the axe and several times put out our struggling fire.

In the morning eighteen inches of snow covered the ground. Peyto had a hard tramp up the mountain for our horses, which had fasted the long wintry night. Packing up was trying work, as it was

impossible to get thoroughly warm, and even our gloves were frozen. Every rope and canvas cover was stiff with granular ice, making them weigh twice as much as usual. While being packed, our famished horses bit off bark and twigs from the neighbouring bushes.

Our camp had been high on a mountain whence we could see the deep Blaeberry valley to the west, while more to the south lay the pass which we were trying to reach. We continued to make a traverse of the mountain side, which was heavily wooded and intersected by several ravines. We were just started on our march when a thick snow-storm commenced and shut out every landmark. The general slope of the mountain and the compass were our only guides. The steep-banked gullies gave us several exasperating climbs or forced us to descend long distances to find a safe way across, and eventually one of them compelled us to descend to the bottom of the valley, running, fortunately, in the same direction that we wished to go. It led no doubt to the pass, though Peyto could not recognise any familiar landmarks in the heavy storm. Another twenty-four hours of storm would have made our position rather serious. The snow was now over two feet deep and increased as we approached the pass. Peyto and I went ahead and broke a path for the horses, but even then some of them lay down in the snow and groaned pitifully, for they had had very poor feed throughout the entire trip and none during the past night. Urging

SUMMIT OF THE BAKER PASS

them on, we continued marching and were glad to find the slope becoming more and more gentle, till at length a level space with the clouds beyond showed that the pass summit had been reached. We made camp in three feet of snow and turned our horses out in a meadow, where they got some grass by pawing away the snow. Tall spruces surrounded the meadow, which was a uniform white expanse unbroken by any projecting branch or bush. Clouds and occasional snow-storms made a wintry sky and towards evening the sun broke through and cast a cheerful light over a massive mountain to the west.

Our camp at this point was at the head of the north branch of the Kicking Horse River, and every step would now lead us nearer civilisation and to lower altitudes. In three days, after having been exposed for more than two weeks to nearly constant storms, we reached Field, where there was no snow and even a few autumn flowers were in blossom.

CHAPTER XII

PLAN TO EXPLORE AN INTERESTING REGION — DESOLATION VALLEY — UNUSUAL AUGUST SNOW-STORMS — FIRST VIEW OF MORAINE LAKE — ITS MARVELLOUS BEAUTY — WE INVESTIGATE A NEIGHBOURING STREAM — ALPINE LAKES — SLOW PROGRESS THROUGH THE PATHLESS WOODS — A DESERTED MINING CAMP — FIND SOME USEFUL PROVISIONS — OUR HORSES DISAPPEAR — ALONE IN THE WILDERNESS — RELIEF AT LAST — MAGNIFICENT VIEW OF THE VERMILION PASS — ANOTHER LARGE LAKE DISCOVERED — CURIOUS IMPURITIES IN THE WATER — EXPLORE TWO VALLEYS IN BRITISH COLUMBIA — A PROSPECTOR'S CAMP — PEYTO'S HORSES LEAVE HIM — A TREACHEROUS RAFT — BAFFLED BY MINERS' TRAILS — REAL SOURCE OF THE VERMILION — AN ENCHANTED MOUNTAIN — THE RIVER DIVIDES INTO MANY SMALL STREAMS — TRYING DESCENT OF THE OTTERTAIL RIVER — A PAINFUL ACCIDENT — A TEN-HOUR MARCH — BEAUTY OF O'HARA LAKE

A REGION that is sure to be popular in the near future lies south of Lake Louise. For many years it had been an object of my ambition to explore this part of the Rockies, which, though skirted on two sides by the railroad, was not mapped in its interior. My plan to enter this region was at length, in 1899, perfected. More precisely it might be described as the Summit Range of the

Rockies between the Bow River on the east, the Vermilion and Ottertail rivers on the west, the Kicking Horse Pass on the north, and the Vermilion Pass on the south. It was my idea to skirt round the outer edge of this nearly rectangular block of mountains, whose area was about three hundred square miles, and to ascend every stream and valley which offered a route into the interior.

To facilitate our progress through an unmapped and trailless region, where good nature and patience would, no doubt, be put to the final test in overcoming countless unforeseen obstacles, I reduced my outfit to the minimum size. It consisted of one man, Ross Peecock, upon whose good nature I justly placed great reliance, and four horses, two of which we rode.

We left the chalet at Lake Louise on the 13th of August, and crossing the bridge which had recently been made over the stream from the lake, left the trail and entered the woods. Following a nearly level traverse, we reached the mouth of Paradise Valley in two hours. Our journey for the next two or three hours was through swampy meadows or heavy forests, till at length the slopes falling away to the south, and glimpses of new mountains appearing through the trees, showed that Desolation Valley had been reached. The woods were open and easy to travel. As we descended some gently sloping meadows, the grand range of jagged peaks on the south of Desolation Valley came into view. A

few minutes later we were at the border of the valley stream, which flows in shallow rapids over a bed of rusty-coloured stones. We made camp higher up the valley, where the stream expands to a width of one hundred yards and makes a chain of pools decorated with low islands. A strong south wind and threatening sky caused us to put our tent up quickly, as a storm could be seen coming over the mountains, and in a short time a warm summer rain was falling.

Showers fell during the night and developed into a continuous downpour all the following day. It grew cooler, and in the early evening a slight whitening of snow appeared on the flanks of Mt. Temple, opposite us. About ten o'clock at night the rain suddenly changed to snow.

A foot of snow lay on the ground in the morning and the storm continuing all day, added another six inches by evening. This August snow-storm, at an altitude of less than six thousand feet, is the most remarkable freak of weather that I have ever experienced.

The snow-storm ceased in the night and by morning there were signs of clearing. The snow settled rapidly, though there was but little sun. Overcome by our enforced idleness of two days, I set out in the afternoon for a tramp up the valley. Some years before, Allen and I had seen a fine lake in this valley from the sides of Mt. Temple, and I hoped now to find it. I walked about a mile and a half and came

to a ravine, where a roaring cascade, encumbered with logs and great boulders, comes out of the valley to the south-east. I got across on a slippery log, and after another mile, came to a massive pile of stones, where the water gurgles as it rushes along in subterranean channels. Ascending a ridge about fifty feet high, there lay before me one of the most beautiful lakes that I have ever seen.

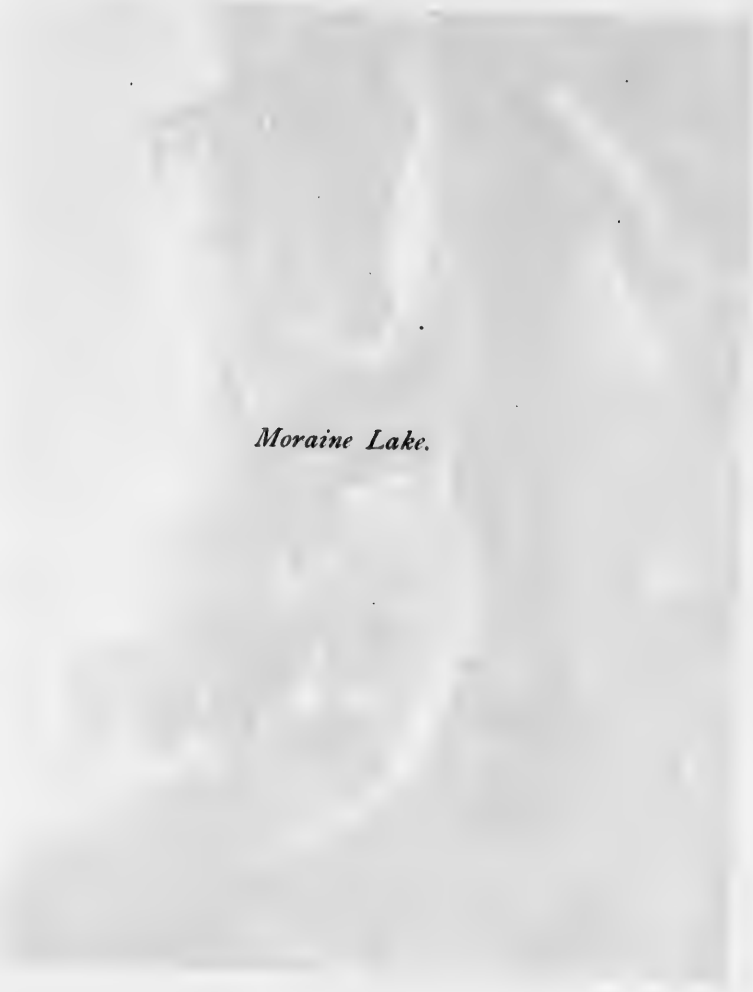
This lake, which I called "Moraine Lake," from the ridge of glacial formation at its lower end, is about a mile and a half long. A green forest covers the north shore, while the opposite side is overhung by a high precipice. Two large piles of débris from the mountains dip into the lake and encroach upon its surface in semicircular lines. An imposing cliff, like a Tower of Babel, makes a grand terminus to the range of mountains on this side of the valley. Beyond the water is a succession of high peaks rising five or six thousand feet above it, with a few short glaciers among them. The water is very clear and of the characteristic blue-green colour. A number of logs were floating on it in various places, while others crowded the shore and raised the water level by damming up the outlet stream. Part of the water escapes by subterranean channels among the quartzite and shale ledges of the moraine, and the rest flows out at the north-west end through an immense mass of logs. I think these trees have been stripped down by snow-slides and hurled into the lake during some recent winter.

At the time of my arrival the lake was partly calm and reflected the rough escarpments and cliffs from its surface. No scene has ever given me an equal impression of inspiring solitude and rugged grandeur. I stood on a great stone of the moraine where, from a slight elevation, a magnificent view of the lake lay before me, and while studying the details of this unknown and unvisited spot, spent the happiest half-hour of my life.

Elated with this beautiful discovery, I followed the ridge, and after crossing the outlet stream, went back to camp by a different route, firmly decided that no time should be lost in moving our camp to the shores of Moraine Lake. I related my trip to Ross while we ate supper and picked the bones of a grouse we had killed.

We were up at five o'clock the next morning. The weather was beautifully clear and only six inches of snow were left. A potentilla, a bushy plant covered with bright yellow flowers, which grew inside our tent, had cheered us for several stormy days. Out of the thousands of flowers in this valley, it alone had escaped the snow by the chance of our tent's protection. However, one of our hungry horses noticed the plant as the only green thing in sight and quickly consumed it.

We reached the lake in an hour and made camp a short distance down the left bank. The snow was completely gone near its shore, because, for some reason, much less had fallen here than farther



Moraine Lake.

down the valley. We spread our blankets on the ground in the bright sun, to dry. While Ross was putting things in order I hurried over to the moraine ridge with my large camera and photographed the lake. The effects were fine, and some misty clouds were rolling over the high mountain peaks. While I was at this Ross caught a fine trout, which we ate for lunch. In the afternoon we walked to the other end of the lake and, though the country was open, were surprised to find that it required forty minutes. From this end a narrow gorge may be seen across the lake, above which is a hanging glacier and an imposing snow mountain of great height. The woods in this part of the valley had been burnt over a long time ago. The new trees are about fifty years old, so that the general appearance is that of a green forest. Some of the trees destroyed by the old fire were very large, as is shown by logs three or four feet in diameter.

The mountains roared all day. Repeated avalanches of snow came from Mt. Temple, and the long winding streams could be seen moving among the cliffs, attended by a noise like thunder. In the evening a considerable rock-slide fell on a slope across the lake. Several great masses of stone came off the mountain and descended in tremendous leaps, making a ripping sound like that of a cannon-ball. One of these struck a large stone and burst into pieces with a loud report and a cloud of dust.

The site of our camp was delightful. The ground

was smooth and hard and had a slight slope towards the water. The seasoned driftwood along the shore made the best kind of camp-fire and the balsam trees behind our tent gave us fine flat boughs for our beds. From a large log in the lake, just in front of our tent, we caught ten trout in the evening. We got a long pole and attached two hooks to the smaller end. To the other, we tied a line, and then giving the pole a shove, it carried the hooks far out into the lake. In a moment the pole could be seen to move and then to swim away, this way and that, showing a fish had taken the bait. We soon had all we wanted and a great swarm of hungry fish appeared in the clear water under our floating dock. They are a kind of speckled trout, and the largest was seventeen and one-half inches long, though none were less than fourteen inches. We had fresh fish from the lake at five minutes' notice for every meal thereafter.

A stream enters the valley about one mile below the lake. It comes from the south-east beyond the curious and impressive rock cliff, which we called the Tower of Babel. On the 19th we started to explore the valley whence it came. I carried my camera, and Ross our luncheon and a pail in which to make hot coffee. Just as we were off, the sun came over the mountain and illumined our pretty tent with a flood of light, while the dark lake and cliff beyond seemed almost gloomy by contrast. We scrambled over the log dam and the massive ledges of the moraine, to the other side. The woods were

moist with night dew and a myriad drops of water, like rounded diamonds, were delicately poised on the tender leaves of the white-flowered rhododendron. No other bush holds so much rain or dew on its foliage, and to avoid the showers we used long sticks to shake them as we advanced. We climbed to the base of the Tower of Babel in half an hour, and looked down into a new valley. It was not far to the stream, and in a short time we stood upon its bank. Open woods made our way easy through this new and pleasing region. Suddenly a long stretch of water opened before us and disclosed a beautiful scene. Beyond the pretty banks of the stream, lined with birch and willow bushes, appeared in the distance an Alpine peak, fringed with a narrow border of ice near its tooth-like crest. In the middle distance on the left stood a forest, while on the right, there was an open grassy meadow. The shallow stream flowed gently in an extended channel, where the quiet surface, interrupted by stones or the ripples of slow moving water, reflected the distant peak. Everything in these surroundings helped to make one of the most beautiful pictures that I have ever seen in the Rockies. I was very anxious for a photograph of this spot, so while Ross lay on a mossy bank, I searched for a good position and endeavoured to group the bushy banks and mountains in harmonious lines. We were very much pleased with the place, and Ross suggested that, since the other was called Desolation Valley, we might call this

"Consolation Valley," a name that seemed quite appropriate.

On the south side of this valley is a rock precipice, commencing with the Tower of Babel, and then gradually increasing in height eastward, till it terminates in the Alpine peak just described. The face of the wall is more nearly perpendicular than any I have seen. Some of the cliffs, for nearly a thousand feet, must have an angle of between eighty-five and eighty-eight degrees, while the extreme height is about four thousand feet from the valley.

We followed the stream for some distance and came to a small lake. Beyond this was another, of similar size, separated from it only by a narrow ridge of stones. Leaving Ross at the first and telling him to expect me back in two hours, I continued to explore the valley. The second lake rests against a glacier which discharges pieces of ice and solid snow into the water. Some of these were floating about like small icebergs, and others were stranded on rough stones of the shore. The ripples were flashing in sunlight, and some ducks were swimming over the water. Among the massive ledges of this old moraine a few birds were flitting about, and I was delighted to hear again the plaintive song of the white-crested sparrow. This was a characteristic upland lake of the Rockies, where glaciers, moraine, and forest made a perfect picture of Alpine beauty. I walked round the lake to the music of rivulets and the frightened squeak of picas through meadows of

CONSOLATION VALLEY

flowers, recently covered by snow and beaten down by storms, but as fresh and bright in colour as ever. The blue sky above was flecked by snowy clouds, and the sun's heat made frequent avalanches of ice on the opposite mountain.

I climbed more than one thousand feet on the ridge north-east of the lake, and saw two passes, one opening to the east, and the other on the left, probably into the Bow valley. Later explorations would solve these problems. As I was climbing, the sky suddenly thickened and became threatening. The air grew colder and seemed to be ready for snow, so that as a sufficient height had been reached to command a view of the entire valley, I returned to the lake where Ross was waiting. Here I had a delicious lunch of bread, marmalade, and coffee.

We followed the stream bank and had an easy trip back to our camp. In the evening we caught a dozen trout to take with us on the next day's march, for it was now necessary to continue our journey towards the Vermilion Pass.

August 20th. The weather was threatening in the morning. Bands of mist swept above the lake and against the mountains, driven by strong winds in opposite directions, making grand cloud effects. We bade farewell to Moraine Lake about 10.30, and followed the left bank of the stream, past our first camp, to where this valley opens into that of the Bow. Here we turned south, crossed the stream, and commenced to ascend the ridge which faces the

Bow valley. We soon got into a dense forest on a steep slope, where very slow progress was made in spite of much chopping of wood and urging of horses. Thinking it best to get above the tree-line, we ascended, and for a time, had easy travel, but presently came to a long rock-slide, which it was impossible to get above or to cross. Nothing was left but to descend and lose all our hard-earned climb. These rock-slides are barren piles of broken, lichen-covered stones of considerable size, easy for a man to scramble over, but impossible for horses. Several hundred feet below we found a way for the pack animals, and about evening, made camp in the woods on the mountain side, 6600 feet above sea-level. On this shady north slope some snow from the great storm was still left. As we unpacked it commenced to rain, and a drizzle continued until morning.

I had learned from Wilson that about opposite the station of Eldon, there is an old copper mine and several log shacks built by the miners, but abandoned long since. As it was in an upland park of great beauty, it seemed well to make it a camping place on our trip. So the following day we ascended wherever any obstacle appeared and gradually increased our altitude. Heavy timber and swampy places with moss-covered rock-slides gave us great difficulty. Ross and I led alternately, for it appeared that the responsibility of finding a way through the unending obstacles and of cutting trees entailed too much labour for either one constantly. Two hours of

such work were enough to exhaust all of one's good temper and patience. It was surprising with what a will and dash either of us would commence to lead the procession, and how, after a time, this gave way to hopeless despair. Then from the front something like this would be heard. "It is absolutely impossible to get through here. There is a rock-slide on one side and the timber is piled five feet high on the other." "Then why don't you go ahead?" came from the rear. "Because I am standing on the edge of a cliff twenty feet high." About such times we simply changed leadership, and while one rested his nerves, the other used his in making a slow advance.

About mid-afternoon we came to an old trail which descended the slope and soon led us to groves of Lyall's larch and upland meadows. The miners' cabins appeared above us, and in half an hour we were unsaddling our horses in this miniature deserted village. Some immense larches covered the ridge and the place was delightfully open and beautiful. These Alpine meadows have a wealth of colouring impossible to describe. In the short grass a multitude of antennarias grow; their leaves covered with a whitish down, which makes a silver sheen when wet with rain and turns the drops to pearls. The square-stemmed white and purple bryanthus revels in these meadows, and above them the heads of anemones and the varied-coloured painted-cup, with purple, scarlet, yellow, white, or greenish flowers, make a gay display of colour. These are the commonest

plants, but you will see bluebells, larkspur, valerian, forget-me-nots, and many others among them.

After the horses were turned loose and our tent set up, Ross and I investigated the old shacks. They were low houses about twelve feet square and built of logs. Inside one of them were some rough sleeping places, strewn with boughs. There were two bags of flour and several others containing coffee, beans, or sugar. In a rough cupboard, made of a box nailed to the wall, were several dozen tins of tomatoes, condensed milk, and various condiments. An iron stove was rusting under the leaky roof, and the porcupines had played havoc with the flour and other accessible food, much of which was valueless. We took a supply of condensed milk, sugar, corn-starch, and tomatoes, to eke out our pile of provisions, and used some golden syrup, which we discovered, to flavour our flap-jacks. Ross knew how to make them remarkably light and wholesome.

The other shack was dry and in far better condition, but offered nothing to our purpose. Suspended by a cotton string to a rusty nail in the roof, was a case labelled "Five Hundred Detonating Caps," and a few feet away on the floor was a heavy box labelled "Powder," which probably contained enough explosive to tear a hole in the mountain and arouse the natives from Banff to Laggan.

During the afternoon it rained, but in the night it grew much colder and began to snow. The weather was still dubious in the morning, though the sun

broke through the clouds by noon. I ascended a ridge beyond the copper mine, which was not far distant, to a height of eight thousand feet, and got a fine view of the Bow valley from beyond the Vermilion Pass to the river's source, a sweep of about forty-five miles. In the afternoon I went into a beautiful open vale, west of our camp, and after climbing the ridge beyond, looked down on a fine lake nearly a mile in length. It lay several hundred feet below, and after a rapid descent through a thick woods, I found myself by the shore. A small glacier and a barren pile of moraine débris were seen beyond the lake, while the slopes on either side were more cheerful sweeps of forests and green slides. The shore is flat and mossy, and some purple asters and bright castilleias made a pretty colouring among the rough quartzite stones and broken timber lining the water's edge. Two young ducks were playing on the blue water.

The lake sends a considerable stream towards the Bow and is joined not far from the lake by another which comes from the open vale near our camp. I crossed the outlet stream on floating logs, which had drifted from the lake, and climbed a high ridge on the other side. The top of this was a mass of tottering cliffs, so much disintegrated by frost and weather that they seemed dangerous to approach. From this I saw another short valley, with several small lakes, the lowest of which is crescent-shaped. After sketching the streams and mountains I descended

into the valley and then made my way back to camp through the woods, trying to find a good route for our horses. The last mile to camp was up a beautiful torrent with grassy banks and noble trees on either side. One spruce was more than four feet in diameter. This whole region, for a mile or more, is a veritable park of Lyall's larch, and abounds in picas, marmots, and porcupines, one of which I came upon as I approached camp.

Towards evening the weather thickened, and showers of sleet and snow fell. The moon was a little past full, and during the cold night, it broke through the clouds and mists that were sweeping over the mountains. The cliffs loomed dark through ghostly and fleeting shrouds of fog, and the sharp-lined shadows of the larches above us were thrown in bright moonlight upon our ice-covered tent. Rain in the morning made the fourteenth day of almost consecutive stormy weather, which is past all precedent for the month of August. Much delayed already by storms, it was necessary to make rapid and long marches henceforth. However, a new contingency had arisen,—our horses had disappeared! Ross searched for them all the morning, and returned about two P.M., saying he had been nearly to Eldon, in the Bow valley, east of our camp. Again in the evening we both set out, I up the ridge, and Ross towards the muskegs and meadows below our camp to the north. No sign of our animals was discovered. A curious effect

on our imagination was made by our trying to hear the bell. Both of us fancied we could hear it, ringing constantly, in one direction or another, though we could not agree upon the locality.

It was useless to waste more time hunting over the vast extent of open country that surrounded our camp, so I decided to send Ross back to Laggan, and then by rail to Banff, for more horses, or another man to find our own. Owing to the cold weather I had no doubt we would be able to cross the streams which come out of Desolation and Paradise valleys. In the morning at eight o'clock Ross started for Laggan. Left absolutely alone in the wilderness for the first time, I spent the entire morning gathering fire-wood which the miners had cut, and making camp comfortable and neat. At night I banked the camp-fire, and in the morning, after eleven hours, it was still burning.

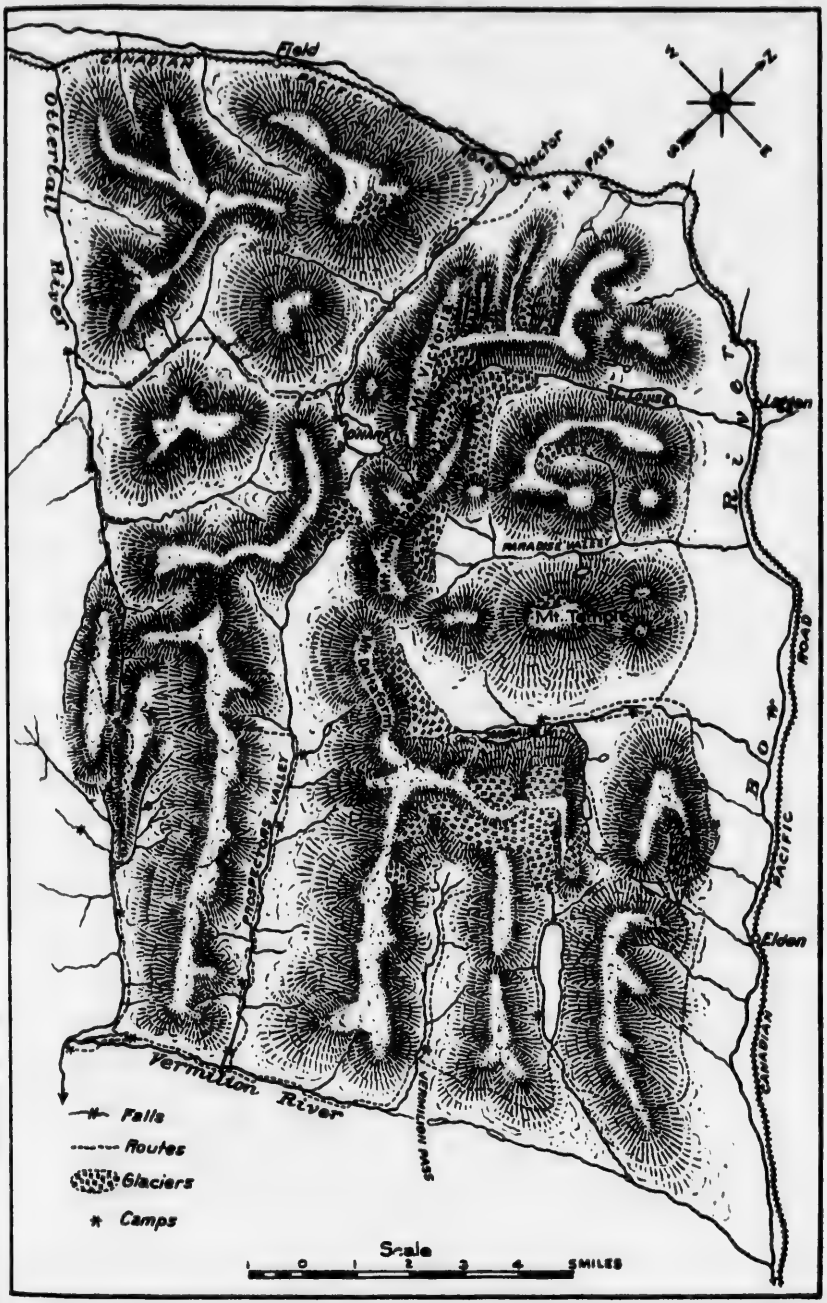
August 25th. Fog and snow showers were the curtain raiser this morning. The continuous performance began at ten o'clock with a heavy snowstorm, accompanied by a rapidly falling barometer. The best weather so far at this camp has been merely a temporary cessation of either rain, wind, or snow. My two pairs of boots and a pair of slippers are alternately drying before the fire. When all are soaked, I go to bed. This performance repeated about ten times makes up a full day.

Ross has now been gone for two days, and I had almost hoped he would return to-night. The barometer is rising steadily at last, and the highest peaks

are disclosed through clinging clouds. The sun at evening shed a pale golden glow through the larches, while to the east the mountains and clouds were bathed in a rich purple light. From near our tent the valley can be seen as it sweeps down in magnificent forest slopes, making a descent of about three thousand feet to the Bow River, three or four miles distant. The railroad can be seen nearly from Banff to Laggan, and the "Imperial Flyer" is in view for forty-five minutes, creeping apparently like a snail through the valley. It is getting colder, and at seven o'clock the tent is stiff as parchment with ice.

August 26th. The sun shone and the barometer was rising. I could still hear that bell ringing, but paid no attention to my fancies. However, it continued, and at length I imagined I could hear the tramping of horses. Then the bell sounded louder than ever. I got up, dressed hastily, and came out of the tent just in time to see all our horses come galloping into camp! Ross would arrive in a few minutes, no doubt, and I gave the horses salt, so they would stay near camp. After a little, I tied one to a tree and made breakfast. It began to snow again and the barometer was falling. Why did Ross not come, and where had the horses been all this time?

I climbed the ridge in the hope of getting a shot at a sheep I had seen on a previous trip, or at least of getting some ptarmigans for supper. I got neither the sheep nor the ptarmigans, but thought I heard far



SKETCH OF A PART OF THE ROCKY MOUNTAINS BETWEEN THE KICKING-HORSE AND VERMILION PASSES.

FROM A ROUGH SURVEY BY THE AUTHOR.

in the distance the sound of wood-chopping. Relief at last! Ross and someone else were coming up from Eldon and had horses with them, because they were cutting trees fallen across the trail. I descended into the meadow, where a coyote was hunting the picas and marmots, and soon reached camp. All was as I left it, so there was no relief after all. Ross had been gone nearly three days, and it occurred to me that he may not have reached Laggan at all. What if he had sprained his ankle, or met with some mishap in the timber and rock-slides of the pathless wilderness between here and Laggan?

I spent the afternoon writing notes, while snow fell outside. About five o'clock I heard a shout, but my imagination of late had been playing strange pranks. A moment later I felt sure I heard more shouting. I answered with vigour, and putting on fire-wood, fanned it into a blaze. Presently shouts again came out of the storm from the ridge above our camp. I replied repeatedly, for it was snowing hard, and a dense fog through which only the nearest trees were visible, and those but little beyond, appeared like ghostly forms, enveloped everything. Two riders emerged from the gloom, and I recognised Tom Lusk and Ross Peecock. I served the men at once with an excellent camp dinner of bean soup, broiled ham, tea, bannocks, and apple sauce. For dessert I proudly set forth a newly discovered dish made of cornstarch blanc mange and marmalade, flavoured with Scotch whiskey. The dinner

was pronounced a great success, and the orange pudding, especially, was praised by Tom, who smacked the flavour of Scotch with gusto.

I told about the horses coming into camp, and learned how Ross had reached Laggan in five hours and gone to Banff by rail that day. Here he saw Wilson, and returned with Tom Lusk, camping the first night at Hillsdale. On Saturday they reached Eldon and forded the Bow in four feet of water, as the river is very high. The Saskatchewan at Edmonton is in great flood and carrying down houses as a result of this abnormal weather in the mountains. It snowed so hard all night that the poles bent and nearly let down the tent. In the morning there were six inches of new snow on the ground though the sun was struggling through the clouds. The brilliant mountains and the larch trees, bending their branches in submission to the burden of snow, made a marvellous but chilly picture for midsummer.

Tom Lusk packed up and left us in the morning as our horses had discovered themselves. The newly arrived ponies and our own bit and kicked one another, for cayuses recognise friends or enemies in every strange outfit. Tom left us with protestations of his unwillingness to go. It would have been dangerous to our horses to travel through the woods while there was so much snow, so we remained in camp an entire day, and on the 28th set out towards the Vermilion Pass, by traversing the flanks of the mountains, as we had done hitherto.

We followed the Eldon trail for a mile and a half, till we were one thousand feet below the level of our camp and struck into the woods. Then ensued the most miserable day's travel yet experienced. Slushy snow lay deep in the heavy forest, which, though green, was blocked by many fallen trees and moss-covered rocks, very trying to our struggling horses. The bush was wet, and our water-soaked boots were very painful from cold. Being forced by the nature of the slopes to ascend constantly, after five hours' travel, we came to the crest of a ridge nearly at tree-line. From this a magnificent view of the Vermilion Pass was disclosed. Storm Mountain and Mt. Ball stood in massive grandeur under a cloudy sky on the further side of this great rent in the continental watershed. A continuous green forest covered the pass for a breadth of four or five miles, sweeping up the mountains and into a fine valley which appeared on our right. Into this we planned to descend, and after a brief survey of the mountains, I found a shallow gully apparently suitable for our purpose. Following the fresh tracks of a bear, we urged our horses forward, and got safely down to the valley bottom, making a drop of nine hundred feet. Here, beside a fine stream, we paused for a short rest. "This is God's country," said Ross, as he looked around on the open meadow and green forest which made such pleasant contrast with the snowy region we had recently left. Our horses were no less pleased than we, as was evident by

their looks and actions. We ascended the valley through a succession of flat muskegs and woods, and in less than an hour, came to a fine lake, where we made camp. There was no trail, but a few blaze marks on the trees showed that some trapper had visited the place. After a hearty dinner and fourteen hours of work, we slept soundly through a rainy night.

The weather was better in the morning, and leaving Ross at camp I started to explore the upper end of the lake and valley. This lake runs about north-west and south-east and sends a stream into the Vermilion Pass. It is half a mile wide and probably three miles in length. One of its most curious features is a crescent-shaped dam of logs and tree roots about one mile from the lower end. This extends from shore to shore, and probably marks the shallow water made by some old glacier moraine. I thought at first of naming the lake from this circumstance, but was unable to make anything euphonious out of "log-dammed lake," while some of the possibilities seemed rather breezy and western. The water, though otherwise pure and clear, is full of black spots about the size of a pin head. Looking more closely I saw that they were apparently the larvæ of some insect, armed with two propelling flippers with which they move through the water. Their general appearance was like the small grey gnats which swarm in August and September. Among them a few fiery red, spider-like creatures

were seen less frequently. From this unpleasant and extraordinary circumstance, we could not use the lake water, but found a fine spring near our camp. The lake is full of fish, of which Ross caught a number while I was on my tramp. They are speckled trout, not so large as those in Moraine Lake. Their gills are uncommonly red, possibly from irritation of the larvæ in the water. This lake at its lower end is less impressive than others. Some high glacier-covered mountains appeared down the lake, but distance detracts from their grandeur. A long ridge with an even slope banded with light green where snow-slides had swept through the fo. :ts extends along the north side of the valley for several miles. A very high and precipitous ridge guards the other side of the valley and comes down close to the lake in some places.

I reached the other end of the lake in an hour without difficulty. In one place a vertical cliff rises out of it, but I found a narrow ledge, where, in water up to my knees, I walked round its base. The cliff continues to descend vertically below the water's surface to unknown depths. A short distance beyond the lake is a precipice with a glacier at the top, where a stream makes a fall and then crossing a flat enters the lake. Fording this stream I skirted around the lake through a grove of magnificent spruces and climbed a grassy slope on the north. This was covered by turf and mountain flowers. Thousands of bluebells, yellow composites, and several unfamiliar

blossoms made this warm south-facing slope a lovely garden. I came upon a porcupine and its young offspring browsing on the succulent herbs. The mother gave me a nervous look and ran off, basely deserting its little one. I was surprised at the spirit of the little baby porcupine, which came at me and raised its spines and tail in self-defence. I ascended rapidly on an easy incline and soon began to get splendid views of high mountains at the valley head. What were these strange peaks? The broadening view tempted me to climb ever higher. I now saw the lake in perfect outline, and began to get better ideas of the streams and mountains.

At nine thousand feet I stood on the crest of a ridge overlooking the Bow, but a higher peak rose to the north. The rough limestones and the depth of recently fallen snow made further progress rather hazardous and difficult. A beetling precipice faced the Bow, and a horrid chasm led down to one of those short valleys near our camp at the mine. Clouds were rolling over the mountains, momentarily revealing new features. Suddenly Mt. Temple appeared to the north-west. The pass below me then connects Consolation Valley with this one, and a long ridge separates the two valleys from that of the Bow. A gap breaks through the ridge at the head of Consolation Valley and leads to the little lake near our old camp at the copper mine. I could see the south side of some of the jagged peaks, which stand guardian over Moraine Lake, and among them lay an

ice-field, two or three miles long which terminates on a shelf above the long lake.

My sketching of streams, lakes, and mountains, finished, I made a rapid descent to the valley. The deep snow rolled up in balls, gathered speed and burst below and around me as I glissaded down the upper slopes. Then the iron nails of my boots made a gritty sound on the sharp limestone of the bare mountain sides till I came to the herbs and dwarfed trees of lower level. An Alpine meadow, a rock-slide, and the upper belt of larches led to the deep spruce woods. The paths of winter snow-slides intersected these, where the spruces are swept away, the bushes downbent and gnarled, and the broken trunks of trees and great rocks hurled together in chaotic ruin. Here grow the mountain ash, willow, and great cow-parsnip. I was soon by the water of the lake, rippling against its mossy log-strewn shore. I reached camp by skirting the north shore and crossed the outlet stream on a long dam of floating trees, similar to the crescent-shaped one a mile from the lake's end.

August 30th. We left the lake and descended the valley for two miles. Leaving the stream we turned to our right through the woods, in a direction parallel to the Vermilion Pass, so that we might enter the next valley to the west. We got very high on the mountain and found ourselves in a critical place among cliffs, where, by the most anxious manœuvring, we finally led our horses to a

steep slope which we descended to the new valley. I was nearly hit twice by large stones, which, set in motion by the horses' feet, came rolling down through the trees. After a march of four hours we camped by a stream among some spruces more than one hundred feet high.

It rained in the night and all the next day, turning to snow later. On the following morning there were twelve inches of snow on the ground, though our altitude was only fifty-eight hundred feet. The sun came out in the morning and made a great stir among the trees. The silence of mid-winter was interrupted by the dripping of water, and the splash of snow falling from the boughs. In the afternoon the snow had settled so much that I set out to explore the valley, in which there might be a lake. An hour of walking proved there was no lake but only a flat muskeg at the valley end. Among the crags and boulders of the higher mountains a number of glaciers appeared, though the clouds concealed them partially. Three splendid buttresses project from the cliff on the west side of this narrow cleft in the mountains, which is a valley, five or six miles long, and of nobler appearance than the other, but less interesting from the absence of any lake.

On the 2nd of September we left this place which we named "Rainy Valley" from the perpetual storms during our visit, and pursued our way to the Vermilion Pass. I was surprised to see that the stream from Rainy Valley turns to the west and

and flows into the Vermilion River. We had been then for several days in British Columbia without knowing it. Near the pass summit, we took the trail, practically the first one we had been on for eighteen days, and followed the Vermilion River for two and a half hours. The weather was warm and fine and proved the first day without rain since leaving Moraine Lake. A broad valley presently opened to the north-west, so we crossed the Vermilion River and climbed through the woods for a mile or so, when Ross shouted out that he had found a blazed trail. Rejoiced at this discovery we followed it in a short descent to a swift, clear stream about twenty-five yards wide. Some high and jagged peaks, ten or twelve miles distant, reared their sharp summits toward the blue sky and purple clouds of evening. They were no doubt Hungabee and Deltaform, the triangular giants at the head of Paradise and Desolation valleys. The great volume of water in this stream proved that the new valley was much longer than any we had explored. We were delighted at our entrance into this unmapped country, which seemed full of promise in the way of discovery.

By the river we came to an old camp, where at first a gruesome discovery seemed probable. Cooking utensils and articles of clothing were strewn everywhere, while decayed provisions and rotten skins of some animals gave every evidence of a hasty departure, or possibly death by starvation. Piles of copper, lead, and iron ore showed the nature of the

former campers. Half expecting to find a skeleton, or some other evidence of disaster, as we poked among these relics, there suddenly came to memory a vague report of how, upon one occasion, Peyto and another man were deserted by their horses somewhere in the mountains, though the exact locality was surrounded by mystery. This then was no doubt the spot. They had to walk back to the railroad and cross the Bow on a hastily constructed raft. In midstream the raft began to dissolve away, and the passengers, who were paddling for the opposite shore with all their might, sank down into the icy waters of the swelling river. With head and shoulders above the water as the last sticks floated away, they reached the shore in safety.

We camped on a hard gravelly meadow farther up the river. A heavy dew fell in the cold shadows as we set up the tent at five o'clock. The weather was again dull in the morning as we marched up the valley. Some teepee poles at various places showed that the Indians hunt here for wild goats. Their white wool appeared on the bushes, and near some of the Indian camps we saw a great number of bones and wool which the squaws scrape off the hides before dressing them into leather.

Leaving Ross to make camp, after we had gone about six miles up the valley, I set out after lunch to explore it further. The trail is very poor in the upper part of this valley. After walking about five miles I felt that it would be impossible to reach the end

PASS BETWEEN O'HARA AND PROSPECTOR'S VALLEYS

before dark and decided to change my plan. If I could cross the stream, which was here much reduced in size, I could climb a long way on the opposite slope and possibly see the entire valley well enough to sketch it accurately. A log projected half-way across the stream, from which I jumped into the water, and with two or three running steps was on the other side. I climbed the half-barren slopes rapidly where grew some flowers recently uncovered by snows of a winter avalanche. The yellow Alpine lily — one of the earliest of spring flowers — was in blossom, together with the white anemone, whose stamens were all eaten off by insects, as a summing up of adversity. From a height of seventy-two hundred feet at five o'clock, I saw the pass which leads into the valley at Lake O'Hara. I recognised its curious outline from a trip made some years before. On the north were the high mountains of the Desolation Range near Moraine Lake, with Mt. Deltaform towering over all. A small lake lies part way up its heavily wooded flanks, but its upper precipices of ice and rock seemed very difficult of ascent. There are about ten of these sharp peaks, between nine and eleven thousand feet high, and as they are precipitous on the other side, and apparently very thoroughly guarded on the south and east, they will make fine problems for future climbs. I reached camp at dark, after thirteen hours of walking and climbing.

In the morning, we packed up and moved out of

this, which we called "Prospector's Valley," from the fact of our finding the old camp near its entrance. It is about fifteen miles long, nearly straight, and covered with green forests throughout. About one mile from the Vermilion, the stream becomes narrow as it flows between rocky walls. Then it plunges by a fearful fall of about fifty feet into a dark canyon. The rocks are white or yellow, but stained in places red or black by iron. The clear blue water flows swiftly over its white bed into a deep pool and then makes a leap into the dark canyon with a roar that may be heard for miles. After the junction of this stream and the other that comes from the pass, the Vermilion becomes a considerable river and made us choose our fording-places more carefully. The stream that comes from Prospector's Valley is larger than the other. After marching two hours more we placed our camp by an iron spring, which gives the name to the Vermilion River, and lies between the two great forks of the river. The river bubbles up in several green pools, and flows over the ground, which is stained yellow. The Indians burn this soil and turn it to a bright red, when it is used as a war paint or a simple rouge in times of peace.

September 5th. This proved the most unsatisfactory day of the entire trip. It had rained all night, and the morning gave no promise of improvement. Crossing the swamp made by the iron spring, we followed certain blazes and a faint trail up the mountain side. The trail became fainter and finally ended

in as thick a bush as I have ever seen. Leaving Ross to cut his way through, I followed the blaze mark to a prospector's claim. It was our purpose to cross over a point of land to the main Vermilion River, which comes in from the north-west out of a broad valley. This was not the trail, and after two hours' hard work we turned back through the wet brush. It seemed best to follow the river and hope to find the trail from a point near the confluent streams. We did so, but could find no evidence of the desired trail, and we camped in despair by the river. Soaked through by a cold rain, our fingers were so numb that we could hardly untie the pack ropes or set up the tents. In an hour, however, our camp was in order, on a bench near the water, and a large fire was burning briskly. For the first time, I was farther away from my object after making a day's march.

We were near the two streams of the Vermilion, one of which comes from the pass to the south-east, while the other heads to the north-west. On Dawson's map, the latter is not sketched out, and is called the "Main Stream." One result of our investigations was our knowledge that the stream from the pass is considerably larger and longer. The stream in Prospector's Valley, then, is the real Vermilion River, as this is the longest and most voluminous tributary and heads near the base of Mt. Hungabee. The exploration and sketching out of these two streams was probably the most valuable

geographical work of our trip. The altitude at this place is about forty-five hundred feet.

A cold rain fell all night, and snow lay on the mountains less than one thousand feet above us in the morning. I rode my saddle horse across the river, for we were on the south side of it, and leaving Ross to pack up things, started to find the trail which leads up the north-west fork of the river. I soon found myself on a high clay bluff, overlooking the north-west fork, which is a muddy stream. A trail seemed to appear on the other side of the river, but a scramble down the clay bank revealed nothing. Entering the woods I beat a way through the wet brush, parallel with the stream, but was chagrined to find myself in a half hour by the other river. Turning back, I resolved to keep a straighter course, and frequently glanced at a distant peak for my bearings. What was my surprise to find myself after a time again on the river bank. A second look, however, added to my perplexity, for this river was muddy and flowed to my left instead of right. It was the north-west fork again, and in the clay were my recent footprints. I had walked for an hour in a circle, in spite of my earnest resolve to keep a straight course. Many a time I have traversed the pathless woods for hours, and come out within a hundred yards of camp without a compass, but the pride of past exploits was here utterly fallen. The mountain towards which I was walking seemed enchanted and as far away as ever. I

can offer no excuse for such poor woodcraft, except that there was no sun, nor uniform slope of ground, and the wet brush which had to be beaten before me, distracted attention.

Following the bluff with jealous care, I came upon the trail in a quarter of a mile. This I took back till it led me to the iron spring, not two hundred yards from our first camp. No blazes on the trees, and a heavy underbrush, concealed it from view and cost us a day and a half of valuable time. After three hours of work I returned to camp, cold, tired, and disgusted, but happy that the trail was found. We marched five hours and camped at 6.30 P.M., many miles up the north-west branch of the Vermilion, in a poor place.

About one mile from camp we passed a fine meadow the next day, where we gave our horses thirty minutes to feed, because they had had a poor pasture the previous night. Shortly afterwards a large stream came in from our right and the trail totally disappeared. While hunting around for it, another stream was discovered, entering a hundred yards beyond from the opposite side of the valley. The river was rapidly dividing into small streams. We discovered the trail at length up the stream to our right. It took us away from the water and into the woods, where a steep ascent of nearly one thousand feet led us to a commanding spot.

The great valley of the Vermilion was visible for more than thirty miles, an unbroken sweep of dark

green forest. From the ridge on the west, which intervened between us and Prospector's Valley, several confluent streams made the one where we had found the trail. One of these falls down a cliff for some distance into a rock basin whence it spouts upwards like a boiling spring or geyser about ten feet into the air, then arching over falls one hundred feet before striking the precipice. On the other side of the narrow ridge, up which we urged our horses by the steepest kind of a trail, was another cascade of far greater height in the dark valley beyond. At its head there lay the lofty mountains of volcanic rock, Vaux and Goodsir.

An upland park of meadows and interspersed groves made easy travel for several miles, till we camped at sixty-two hundred feet on the summit of the pass between the Vermilion and Ottertail. The night was clear and frosty. In bright sunshine the next morning we descended a thousand feet into the Ottertail valley, and hoped to reach O'Hara Lake, west of Mt. Victoria, by evening. However, we did not allow for the countless vexatious delays of losing the trail, which, in this narrow ravine-like valley, is almost the worst I have ever seen. Much of the time we beat a way through the timber without a trail, but the many cut banks guarded by trees, undermined by the water, and sweeping its rapids with their branches, made us climb, and chop, and ford constantly. After an exceedingly hard day, we camped on a rough slide, where our horses had

O'HARA LAKE AND WIWAXY PEAK

scanty feed, and we, only so much room as was necessary to place our tent upon. The snow of a winter slide near us had but recently melted, and the uncovered bushes were putting forth buds and tender leaves. Delicate flowers were in brilliant blossom, while hard by were the evidences of the end of summer, making a strange contrast of springtime fragrance and autumnal colours.

On the previous day we were disappointed not to have arrived at O'Hara Lake, but now felt confident that on this day we should reach that charming spot. I thought the next valley, opening to our right, would be the one to follow, but the trail made an aggravating turn, and landed us far up the valley to the west, whence we could see Mts. Vaux and Goodsir. The trail disappeared in the stream, and it was half an hour before Ross found it, or another in the woods. We followed it for a long distance, but bands of meadow cut through the woods every quarter mile or so, and in such places the grass, willows, and alders grow rank, and a man on horseback is lost in the underbrush. The trail also disappears and must be found on the opposite side at great loss of time. At length, in some uncertainty of our trail, which was leading us too far north, we camped in a rich meadow. Our horses revelled here in the fine grass, which was waving in warm and balmy breezes.

On the afternoon of September 9th, two roughly clad men, one on horseback, and the other on foot,

might have been seen on opposite sides of a wide and roaring mountain stream, pursuing their way through the woods. Wherever an open space disclosed one to another, curious signals were made by their holding up one or both arms. The river was the Ottertail, and the men were Ross Peecock and myself, trying to find a trail and signalling whether any had yet been found or no. In the evening one had been discovered, and the prospects of to-morrow's march were thereby improved.

The trail enters a valley of large size which opens into the Ottertail at this point from the north-east. From its position and direction, I hoped that it would give us a route to the region of O'Hara Lake, the source of the Kicking Horse River, where one day's march would bring us to the railroad. A trip through this delightful region seemed better than to continue down the Ottertail to Leanchoil, especially as the lower Ottertail valley has been burned over.

September 10th. The weather was still warm and beautiful, and in an hour after starting we were on the trail which takes up the new valley. Our horses felt so good from their recent fine pasture that they were nervous and excitable. It was hard to drive them, and on one occasion two of them started back. Running through the woods to head them off, I stumbled on a log, and gave my right knee a terrible blow against a sharp stone. The pain made it impossible at first to even shout to Ross, who was following the trail. When he came to my assistance,

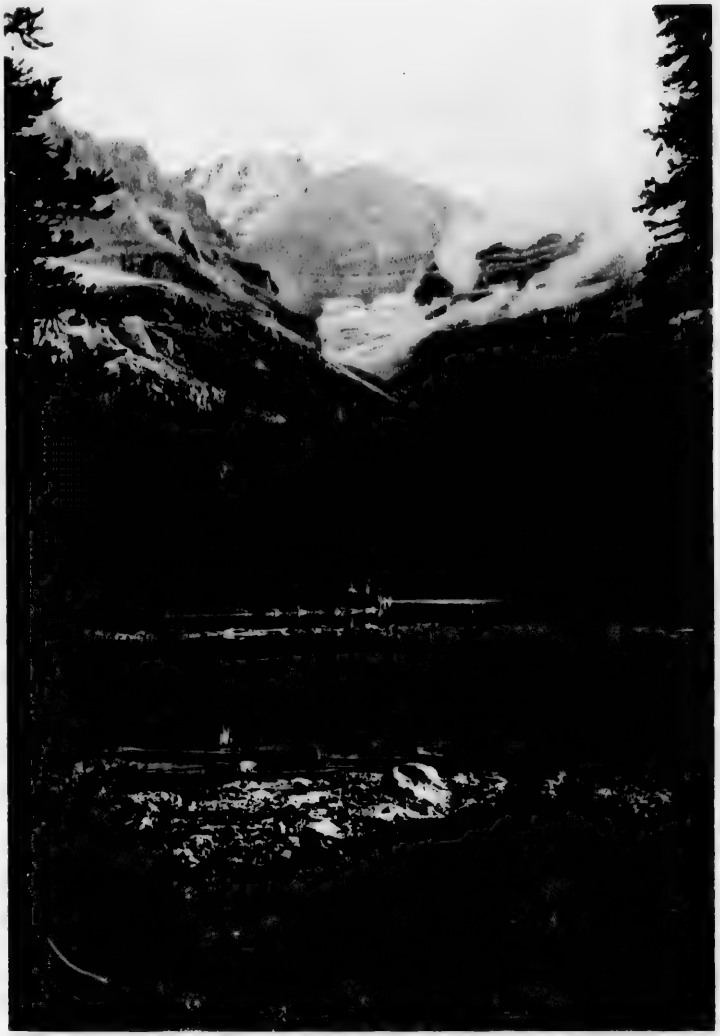
it was some time before I could move, but I finally got on my horse. As the inflammation got worse by riding, I had to get off and walk. It was impossible for me to drive the refractory horses, so while Ross went behind I led. To make matters worse, the trail disappeared, and Ross had to come forward to locate it, which he finally did, some way up the mountain. After this Ross climbed down to the stream, and brought up a hat full of its ice-cold water, narrowly escaping losing it all after a long climb by slipping from a log. The cold allayed the pain somewhat, though my leg was so stiff at first, that I lay down frequently for rest, and the next one hundred yards were the slowest and most excruciating it has ever been my lot to travel. However, the circulation started up with exercise, and in a short time I began to walk well.

The trail, after climbing some way, descends into a fine open valley, where we made very rapid time, by driving our horses up the clear stream, and crossing from side to side. In five miles we came to a side valley on our right, which I had long held in view as the one we should take. After countless delays in beating the trail, we found ourselves, as the daylight failed, at the top of a pass, where, on a single ridge of green, we were surrounded by apparently impassable rock-slides. Westward, the wan green sky was hung with ominous clouds, brooding over a mountain, which, like a massive pyramid, filled all the gap between west and north. The trail was

finally discovered over the rock-slide. Here the Indians had filled all the crevices between the stones with smaller ones, and paved a safe but narrow path among rough ledges. The south side of Mt. Victoria lay in plain view before us, and at 7.30 P.M., after ten hours of marching, we pitched our camp in the darkness beside O'Hara Lake. Our tent was on the identical spot where Wilson and I had slept on bare ground in the fall of 1896.

In the morning the chickadees were singing and calling to one another very sweetly among the spruces. The mosquitoes were as numerous as in summer, though the air was springlike. It was to be a day of rest after our long and tiresome marches, for we were now within six hours of the railroad. O'Hara Lake was a favourite resort of a gentleman of that name, who came here frequently some years ago, and was probably the first tourist to visit the place. If the six most beautiful lakes in the mountains were selected, this would certainly be among them. Personally, I regard Lake Louise, Moraine Lake, and O'Hara Lake as the three finest I have ever seen. Each is between one and two miles long and each has certain individual charms.

O'Hara Lake is surrounded by a noble amphitheatre, the cul-de-sac made by Mts. Victoria, Lefroy, and Hungabee. The water and even the bottom itself are coloured a vivid, clear green. Not far from the outlet, a pretty bay is made by a narrow point which projects a line of trees into the water. Then it dissolves



O'HARA LAKE

in a chain of rocky islets, covered in part with moss, willows, a few dwarf spruces, and beds of purple-rayed asters. Beyond this miniature cape, the shore sweeps out into the broader reaches of the lake, and carries the eye to the cliffs of the farthest shore, where the inlet stream makes a curtain of water as it falls in cascades over dark rocks. At night and sometimes by day, you may hear the sound of the water distinctly, a mile or more distant, as it is carried over the lake. I have never discovered whether there are any fish in this lake or not, though every condition is favourable to them.

The next day we marched six hours down the valley, over a bad trail, and reached the railroad at Hector. Here we traversed burnt timber for the first and only time, of our thirty-one days' trip. When near the valley end, a thunder-storm came up from the west, and swept a curtain of hail and rain over the mountains. A high waterfall on the side of Mt. Victoria was stopped and blown back against the cliffs by the strong winds. We left the wilderness and passed out of the mountains while the raging of storm and the roar of thunder bade us farewell.

CHAPTER XIII

MOUNTAIN CLIMBING IN THE ROCKIES — NATURE OF THE ROCK FORMATIONS — THE MOUNTAINS EASILY ACCESSIBLE — POSSIBILITIES OF THE WEATHER — PIONEER WORK OF THE SURVEYORS — FIRST ATTEMPT ON MT. TEMPLE — A WILD NIGHT — A SCENE OF RUGGED DESOLATION — FINAL SUCCESS — FIRST CONQUESTS BY THE APPALACHIAN CLUB — FATAL ACCIDENT ON MT. LEFROY — THE SUMMIT OF MT. VICTORIA — THE WAPUTEHK RANGE — VIEW OF MT. FORBES — ASCENT OF ATHABASCA PEAK — MAGNIFICENT VIEW INTO AN UNEXPLORED REGION — FIRST CLIMBERS OF THE SELKIRKS — SPLENDID FUTURE OF THE ROCKIES FROM A MOUNTAINEERING STANDPOINT

THE Rockies of Canada offer exceptional opportunities to the mountaineer. The time has not yet come when the climber must travel far into the wilderness to find peaks that have never been attempted. There are hundreds of unclimbed mountains within a few miles of the railroad, and it may safely be said that mountaineering in the Canadian Rockies is now making its early history.

Few other easily accessible ranges in the world possess the rare charm of the unexplored wilderness, where each attempt is a reconnaissance for the best route and every view is looked upon for the first time by human eyes. Perhaps because of this element

of novelty, no great mountain is ever climbed twice. Everyone prefers to attempt a lesser peak, that is absolutely new, than to retrace some other party's steps on a higher mountain. Two exceptions to this rule are Mt. Stephen, at Field, and Mt. Sir Donald, at Glacier, each of which now has the distinction of several ascents.

The average height of the valleys is between four and seven thousand feet above sea-level, and as the greatest peaks are between eleven and thirteen thousand feet, the actual ascent of every mountain can usually be made in one day, so that high-level camps are unnecessary. It may be said that six thousand feet is about the upper limit of total ascent necessary to reach mountain summits in the Canadian Rockies. Glacier and snow work is not dissimilar to that in other mountain systems, but rock climbing has special features of its own. The rocks in the Selkirks are hard schists and shales, which weather into great blocks and offer comparatively safe foot- and hand-holes.

In the eastern or Summit Range, however, the geological formations are utterly different. The lower parts of mountains near the axis of the range are usually Cambrian quartz-sandstones, which are stable when broken, while the cliffs, though often nearly vertical, abound in ledges and steps, which make easy work. This formation, however, is only found up to a moderate altitude, usually less than eight thousand feet, and then only in the sub-range which

makes the continental watershed. The other parallel sub-ranges, of which there are five or six, and the upper parts of every range, are formed of blue and grey limestones and dolomites of the Carboniferous and Devonian ages. Sometimes beds of shales and clay-slates appear also in this formation. These limestones weather into abrupt and often nearly perpendicular cliffs on the eastern face of nearly every mountain, while the western is usually a moderate slope which offers a key to many otherwise difficult ascents. When the strata are nearly or quite horizontal, however, the softer beds weather into vertical cliffs, which make impassable zones round the mountains. Such peaks assume a castellated appearance, and the cliffs are adorned with numerous sharp pinnacles and rounded pillars, which bear a striking resemblance to mediæval ruins. The disintegration of the limestones is very rapid, as may be seen in the immense talus slopes, which have been piled against the mountain bases since the Glacial Period. Frequent rock-falls add daily to these great masses of debris. The gullies on the high parts of the mountains are filled with unstable rocks and lined with tottering walls ready to fall at any time. The danger of falling stones and unsafe ledges is the greatest which the climber will encounter in the Canadian Rockies.

At Lake Louise, Field, and Glacier, the climber is near the base of many fine peaks, and may use the several inns as his starting-point, or at least consider

them his main camp. This is true of Banff, though very few climbers will be tempted to make the tedious ascents of Twin Peaks and Cascade Mountain, which do not offer sufficient compensation for the labour required. Many fine mountains raise their snowy summits at a distance from the railroad, and to conquer them, a camping trip, with horses and tents, should be planned. There are no huts as yet, where the traveller may spend a night, except near Lake Louise, unless we consider the occasional log shacks of prospectors and trappers. A tent or even a bivouac is usually far preferable to these damp, porcupine-infested places.

All the climber's work and the reward of his labour depend on weather. That of the Canadian mountains is no worse nor better than elsewhere. The usual summer weather in June is cold and rainy, and the rivers are in flood from melting snow, to be followed in July by sunshiny warm days, interrupted by brief thunder-storms. August is generally hot and dry, but towards the end of the month, a week or more of rain and snow frequently occurs, and this storm marks the breaking of summer heat. September is a fickle month, and is usually stormy and cold for a long period. Cool October is the best month of all, though the days are short, and even the midday sun casts long shadows in deep valleys. The nights are frosty, films of ice form on pools, and the mosquitoes and gnats no longer worry the camper. The rivers are low and can be

easily forded, while the most distant mountains are distinctly seen through the crystal atmosphere. The only certain thing about the weather is its uncertainty, though in general, fine weather is the rule and rain the exception. During rainy periods, the short intervals of improvement, or the final clearing, are the best of all, and the cloud effects are magnificent beyond description. There can be no finer revelation of the sublimity of nature, especially when seen from the craggy summit of some storm-swept peak, than a view of rugged mountains partly concealed by rolling clouds.

No doubt the earliest ascents of importance were made by the railroad and topographical surveyors. Between 1887 and 1892, Mr. J. J. McArthur climbed nineteen mountains over nine thousand feet and four mountains over ten thousand feet high. Among the latter, the first ascended was Mt. Stephen, in 1887, and again in 1892. Wind Mountain, near Canmore, and the fine peak called Storm Mountain, near the Vermilion Pass, were ascended by Mr. St. Cyr. All this work was for survey purposes and so cannot be called mountaineering in the true meaning of the term. Only such mountains were attempted as could be climbed when encumbered by heavy surveying instruments, and this resulted in their defeat on several peaks, one of which was Mt. Hector.

Almost immediately after the surveyors finished their work for the time being, some ascents were made by visitors to this new mountain world. In

Mount Hector and Slate Mountains.

From summit of a mountain near Little Fork Pass, 10,125 feet in altitude.

the summer of 1893, Mr. S. S. Allen and I were camped at Lake Louise, with the purpose of making some mountain climbs in that beautiful region. Our two weeks' work resulted in capturing two mountains on either side of the lake, and being defeated by Mt. Victoria after reaching a height of ten thousand feet, and by Mt. Temple at ninety-eight hundred feet.

On the latter attempt we started from Lake Louise with one horse and a Stony Indian, named Enoch Wildman. The horse carried a tent and some provisions, about ninety per cent. of which was canned duck, a wholesome though monotonous diet. We went to Laggan and followed a trailless course along the south bank of the Bow for five or six miles towards the base of Mt. Temple and then struck up through the forest of pine and spruce, climbing ceaselessly till near nightfall, when we reached the cliffs of the mountain, seventy-five hundred feet above sea-level. A violent thunder-storm overtook us towards evening, and we sought shelter at length near a lonely rock-girt pool, enclosed by steep banks, a home for picas and marmots. On its wind-swept surface were fragments of snow from an undermined drift. It was quite dark when we turned out our forlorn pony to graze on bushy heaths and birches, the only vegetation among the barren stones. There was no level place for our tent, and a stone wall had to be built to support our feet and keep us from sliding into the lake. It was a wild

night of storm and wind. Showers of hail and rain swept over us continually, and some of the more violent squalls threatened to bring our flapping tent to the ground. We had built a huge fire, for many great logs cumbered the ground, and it roared like a furnace and sent great flames this way and that in the fickle gusts, but towards the dawn, which seemed never to come, it died away into inert ashes. The crackling of our fire gave place to the sound of lapping ripples on the rocky shore. The light of day revealed our wild surroundings. We were under the northern precipice of Temple. A beautiful fall descended in a series of cascades, a distance of about one thousand feet, to enter our little lake. Sometimes the strong wind, blowing against the cliff, or sweeping upward, made the water pause and momentarily hang in mid-air, suspended as it were on an invisible airy cushion, till, gathering greater volume, it burst through the barrier in a curtain of sparkling drops.

Poor Enoch had suffered terribly from cold during the night and begged our permission to return to Laggan, promising to come back the next day, "sun so high," pointing to its place in the early afternoon. He said in his broken English,—"No grass for pony here,—too cold me,—no like it me." So we took pity on him and sent him back to more comfortable quarters, while we rested in comparative quiet, it being Sunday and stormy.

We were on foot Monday morning at four

o'clock. The gloom of early dawn, the morning chill, and a clouded sky had no cheering effect on our anticipations. Our plan was to traverse the mountain-side till we should come to the south-east shoulder, where we had once observed the outline of an apparently easy slope.

At eleven o'clock, we had reached a height of nearly ten thousand feet and came to a vertical wall, about four hundred feet high, a barrier that completely defeated us. At the base of this cliff there was a narrow slope of loose broken limestone, and below this, another precipice. Utterly defeated in our attempt by this impassable barrier, I walked along the cliff base into a semicircular recess in a last vain reconnaissance, while Allen took photographs of the scenery.

Here I had a few moments of quiet contemplation of a scene that in its awful solitude has left a deep impression on my memory. Some great stones, dislodged as I moved, fell with a grinding sound over the edge, towards a narrow chasm, three thousand feet below. A cold wintry wind made a subdued monotone amongst the inequalities of rough stone and the overhanging cliff, and brought up the dust and brimstone odour from the crushing stones. Opposite was a pinnacled mountain stained red and grey, rent into thousands of narrow gullies or beetling turrets by the wear of ages. It was a vast ruin of nature, a barren mass of tottering walls and cliffs, raising two lofty summits far

upwards. Between lay a narrow, secluded valley, so thoroughly enclosed by precipices that a small lake in it was still covered by the granular, half-melted ice of last winter. To the east and south a wild and rugged group of mountains made a continuous range and rose into successive jagged peaks. Over all the rough upheaval of mountains brooded a gloomy sky with long furrows of dark clouds moving majestically before the driving wind. Some of the highest peaks were touched by clouds or indistinct in snow showers, while the sun shot a few beams of light through the gloom and swept the ice and rocks with a weird illumination. Immense piles of débris rested against the mountain opposite, at the base of which was a desolate valley half filled with glacier and confused moraines. No tree or green vegetation of any kind appeared in all this barren scene.

Overcome at length by cold winds and our hopeless prospects of further advance, we turned back and reached camp by the middle of the afternoon. Here we found that Enoch had returned, faithful to his word, and in a very short time we commenced our journey to Laggan.

Next year, August, 1894, we were camped again at the base of Mt. Temple, this time in Paradise Valley. We were better prepared than before, as a year's study of photographs had thrown new light on a possible route up the grand mountain. On the 16th, by way of physical training, we ascended

Mt. Aberdeen, which lies between this valley and that of Lake Louise. The ascent of this peak, 10,250 feet high, was not difficult by the route we took. Surrounded as it is by Mts. Lefroy, Victoria, Hungabee, and Temple, which are among the greatest peaks in southern Canada, the view is well worth the climb. On the following day Allen, Frissell, and I commenced the ascent of Temple. We were up at four A.M. There was no trace of dawn, and the waning moon, now in her last quarter, was low in the southern sky, near the triangular peak of Hungabee. The cold air was full of woody odours and the smoke of forest fires. We crossed the frosty meadows and came to a secluded gorge, filled with massive boulders, looming dark in the early morning light. This place lay between Pinnacle Mountain and the south side of Temple. A steep ascent of scree, where the unstable stones were sliding constantly, required the utmost caution. Sometimes the mass of rocks would creep and grind ten or fifteen yards above us at each step. Not far from us was a place where a rock slide had occurred, and it seems most likely that this unstable slope will some day rush with a roar of thunder into the valley. The constant movement of the stones, and the thought that our presence might be the last straw, made us somewhat apprehensive.

At nine o'clock we reached the pass between Pinnacle and Temple, and from a height of nine thousand feet looked eastward upon that wild valley

of desolation which we had seen the year before. The slanting sun-rays poured a flood of yellowish light along the silent precipices on either side and gently tempered the chill of morning. The air was perfectly calm, and there was utter silence except the clink of our iron-nailed boots on the rough stones. Cliffs and broken stones were on our left, where we had to force a passage, if anywhere. The lot fell upon me to lead the party, and when the rope was adjusted, we commenced work. For the next two thousand feet it was merely a careful selection of gullies and scree slopes, with occasional rock climbing. Our greatest anxiety was the number of loose stones, which in spite of every precaution were sometimes dislodged and threatened those below. At a height of eleven thousand feet we had a discussion as to the better route of two that appeared. One lay at our right and seemed easier, while the other probably lay to our left, and though it was concealed from view, the previous study of photographs convinced me that this would be the better route, and it took some time for them to agree on that point. A short scramble among flat shales and very rough cliffs led us suddenly to the great south slope of the mountain, and we knew our prize was all but taken. At noon we reached the summit and stood at the highest point then reached in Canada. The air was calm and at about freezing point. The summit of Mt. Temple is a sloping mass of blue limestone, comparatively free of snow. The south face

is an unbroken snow-field and glacier, while the east is precipitous. Gullies and ridges of decayed limestone descend from the summit nearly six thousand feet into Desolation Valley, where we saw a fine lake at the base of a precipitous range. We were encircled by a bluish haze through which only the nearest mountains appeared, so that we lost the advantage of a view from the highest mountain in a circle of nearly one hundred miles diameter.

The members of the Appalachian Mountain Club made their first high ascent and commenced serious work by conquering Mt. Hector in 1895. Those composing that party were Professor Charles E. Fay, Philip S. Abbot, and Charles S. Thompson. They had the energy to ascend the Bow Valley without horses, under Tom Wilson's guidance, and with a porter to carry a few provisions and blankets. Mr. Abbot describes the view from Hector, which is probably a little over eleven thousand feet high, as one which "cannot be matched in any other mountain system in the world except in Asia."

During the same summer, Mt. Stephen was climbed by members of the Appalachian Club, though two ascents had been made previously by J. J. McArthur, the government surveyor. Mr. McArthur said, in speaking of a gully near the summit, that to his surprise on the second ascent, "fully two hundred thousand cubic feet of rock which formed the western wall of this fissure had been displaced and fallen into the amphitheatre below." So rapidly

was the upper part of the mountain falling away, that it seemed probable that in a few years it would become inaccessible.

The great snow peaks near Lake Louise now began to attract the attention of climbers. On August 3, 1895, Messrs. Abbot, Thompson, Little, and Professor Fay left the Lake Louise chalet and set out for an attempt to ascend Mt. Lefroy. At noon they had traversed the Victoria Glacier and ascended the narrow snow gorge behind Mt. Lefroy known as the "Death Trap." Quoting from Professor Fay's article in *Appalachia* for November, 1896:

"Almost before our eyes had taken in the wonderful prospect that opened so magically — the sudden plunge of the western gorge, snowless in its upper half, its sloping sides and narrow bottom lined with scree from the heights above; the sea-green lakelets at its foot, three thousand feet below us; the pinnacle of Mt. Biddle leaping up like a petrified flame and pricking the clouds that levelled with the tops of Victoria and Lefroy themselves; the remoter array of peaks unfamiliar in this new aspect — Abbot had scanned the western side of Lefroy, now for the first time clearly revealed to us, and joyfully exclaimed: 'The peak is ours!' And surely his confidence seemed justified. From here an unobstructed way was seen leading up to the long summit arête, which still frowned nearly two thousand feet above the pass. The vast mountain side rose in a sloping wall, ice-clad for the greater

Mount Lefroy and Mount Victoria.
From Pope's Peak, 9825 feet.

part, yet with here and there long upward leads of rock that probably could be scaled, as the dip was in the right direction."

Passing over the details of a long and labourious climb as the party cut steps and slowly worked their way upwards for four and one half hours, the interesting narrative goes on to say:

"Bidding Thompson and me to unrope and keep under cover from falling stones, he [Abbot] clambered some thirty feet up the rift, secured a good anchorage, and called upon Professor Little to follow. This the latter proceeded to do, but while standing at the bottom of the cleft preparing to climb, he received a tingling blow from a small stone dislodged by the rope. A moment later a larger one falling upon the rope half severed it, so as to require a knot. As danger from this source seemed likely to continue, our leader had Little also free himself from the rope and come up to where he stood. From here a shelf led around to the left, along which Abbot now proceeded a few yards and discovered a gully leading upward, unseen from the point first attained, and this also he began to ascend. To Mr. Little's question, whether it might not be better to try and turn the bastion on the shelf itself, he replied: 'I think not. I have a good lead here.'

"These were the last words he ever uttered. A moment later Little, whose attention was for the moment diverted to another portion of the crag, was conscious that something had fallen swiftly past

him, and knew only too well what it must be. Thompson and I, standing at the base of the cliff, saw our dear friend falling backward and head-foremost, saw him strike the upper margin of the ice slope within fifteen feet of us, turn completely over, and instantly begin rolling down its steep incline. After him trailed our two lengths of English rope,—all we had brought with us,—which we had spliced together in our ascent over the last rock slope in order to gain time by having less frequent anchorages than were necessitated by the short intervals of one sixty-foot line. As the limp body rolled downward in a line curving slightly towards the left, the rope coiled upon it as on a spool, a happy circumstance amid so much of horror, for not only did this increase of friction sensibly affect the velocity of the descent of nine hundred feet to the narrow plateau of scree above mentioned, but doubtless the rope by catching in the scree itself prevented the unconscious form from crossing the narrow level and falling over the low cliff beyond. Had it passed this, nothing, apparently, could have stopped it short of the bottom of the gorge leading up to the pass from the western side of the Divide,—a far more fearful fall than that already made."

Abbot died a few moments after his friends reached the place where his body in its terrible fall had been arrested. Two days later the party returned, and with Tom Wilson and W. J. Astley

recovered Abbot's body, now partially covered by recent snows and the edge of a snow-slide.

Another party was organised the following year, and on the anniversary of Abbot's death Mt. Lefroy was successfully ascended.

Two days later Dr. J. Norman Collie, Professor Arthur Michael, Professor Fay, and Peter Sarbach, a Swiss guide, climbed Mt. Victoria. Following the same route as for the ascent of Lefroy they climbed the Death Trap, which is now called Abbot's Pass, and at eight o'clock reached the crest of this col.

Professor Fay writes as follows :

"The morning was exquisite, radiant with sunlight, and in this more exposed position the almost tepid breeze of the canyon became the cool, brisk promise of a gale. To our gratification it later subsided,—so that I may still report that I have never experienced a heavy wind during any ascent in the Canadian Alps. The view to the south was supremely grand through the pure sunlit air ; but our eyes turned from the soaring lines of Goodsir, Biddle, and Hungabee, to the bold wall never yet attempted which rises sheer on the right of the pass. It was not the first time that its broken surface had been questioned for a possible way of ascent."

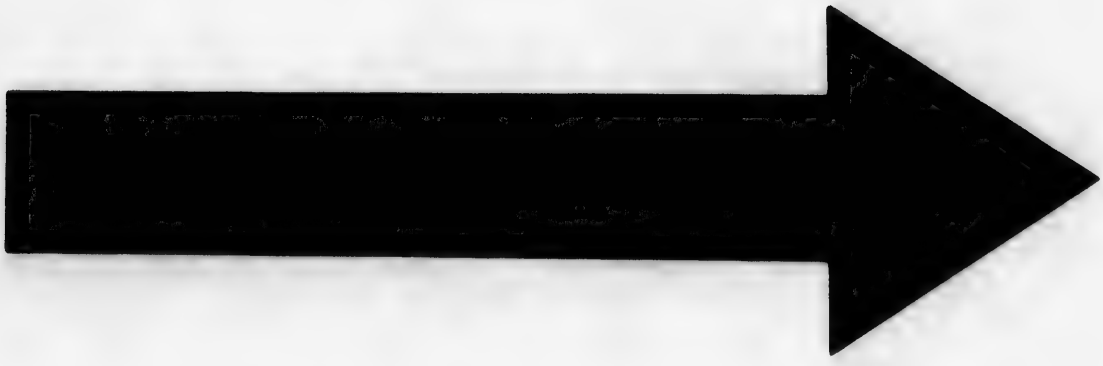
Four hours later, after walking and climbing along the sharp crest which makes the "very ridge-pole of the North American continent," they reached, under Collie's leadership, the summit of Victoria, of which Professor Fay says :

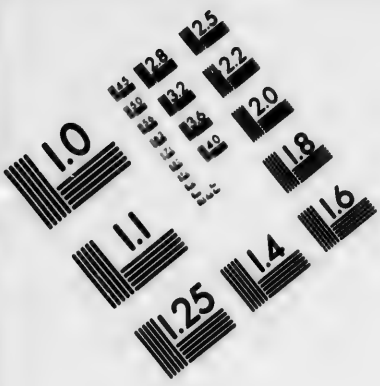
"The summit is an ideal one. Discounting the cornice crowning over towards the lake, there was hardly more than comfortable room for our party. Unlike that of Lefroy, no rock pierced the virgin whiteness. To the north it fell away suddenly into a deep depression filled with gendarmes, separating it from a bastion, from which it seems hardly probable it will ever be approached. Immediately to the west a snow arête falls away less rapidly, rising again almost to our level in the most pointed snow peak I have ever seen. The sides meet in the perfect apex of an angle of less than eighty degrees. It seemed as if its point would prick the palm that should be laid upon it. But most majestic, even awesome, was the portion of the view towards which our backs had been turned during our ascent: soaring Hungabee; the hardly less amazing pinnacle of Neptuak, from behind which peered sullenly the other peaks of the Wenkchemna group; and, nearer at hand, the grand snow-capped pyramidal summit of Mt. Temple, rising behind the ice-wall of Lefroy. While Dr. Collie set up his mercurial barometer (it gave a reading of 11,400 feet), I put in commission the pocket-level. Of all the visible peaks, excepting perhaps the distant Assiniboine and to the northward others still more remote, Temple was the only one rising to a higher altitude than our own summit. Hungabee and the "scalp" on the right-hand tower of Goodsir appeared to be exactly at our level. To Lefroy it was a slight angle of depression."

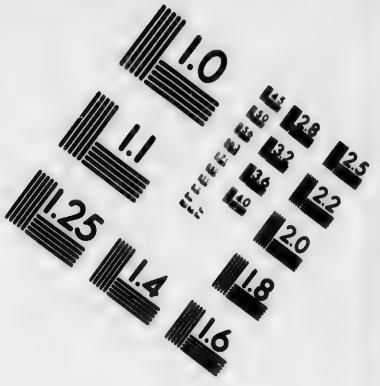
Four of the greatest mountains near Lake Louise had now been conquered, to say nothing of several inferior and easily ascended peaks like Mt. Fairview and Mt. St. Piran. Probably for this reason no less than for their own attractiveness the attention of climbers was next given to some of the giants of the Waputehk Range, north of the railroad. Several expeditions were made over the extensive ice-fields at the head of Bath Creek and west of the Bow Lakes. Mt. Balfour, a snow-buried peak on the continental divide, eleven thousand feet high, fell before the attack of Messrs. Nichols, Noyes, Thompson, and Weed in 1898.

The most recent excursions in the way of mountain climbing were those taken by Dr. Norman Collie and Mr. G. P. Baker to the Saskatchewan River in 1897 and 1898 in search of Mt. Brown and Mt. Hooker. The first trip, which was primarily for the purpose of mountain climbing, was eventually made to embrace exploratory and survey work.

"Our party," writes Dr. Collie, "consisted of G. P. Baker and myself, P. Sarbach (a Swiss guide), W. Peyto, L. Richardson, and C. Black, cook. The weather was excessively hot and the mosquitoes swarmed in countless thousands, making life miserable." Not an unusual condition of things in these mountains. On the 24th of August they climbed Mt. Sarbach, eleven thousand feet high, the last of the Waputehk Range, lying between the Little and Middle Forks of the Saskatchewan. Speaking of Mt. Forbes, Professor Collie writes :







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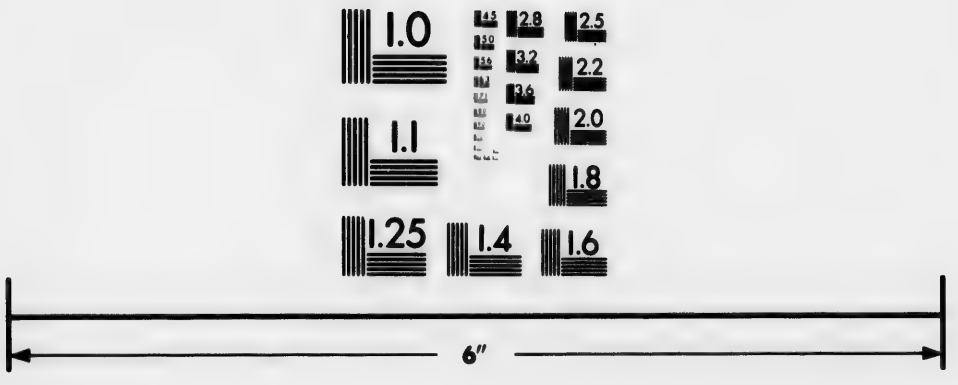

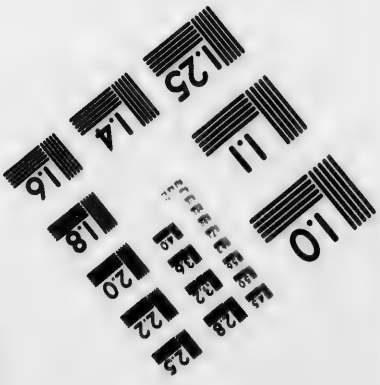

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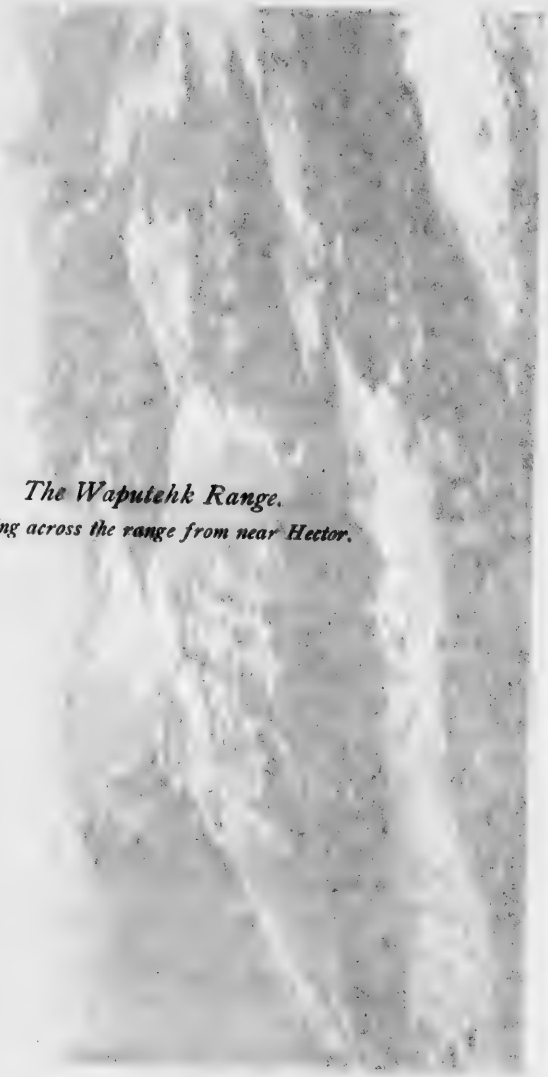
"On August 27th we arrived at the foot of the valley leading to the glaciers we had seen two days before from Mt. Sarbach, towards the westward. Directly to the north of us was the peak we were in search of. Later on, consulting Palliser's 'Journals,' we found that this peak was not Mt. Murchison, as we had supposed, but Mt. Forbes, discovered by Dr. Hector, and estimated by him to be about 13,400 feet. Mt. Forbes is certainly one of the highest peaks in the Canadian Rockies, and must be close on fourteen thousand feet. I have seen it on every side except the north-west, and it always towers as a huge three-sided pyramid at least three thousand feet above the surrounding peaks, which are from ten to eleven thousand feet high. The precipice on its eastern face is more sheer than the western face of the Matterhorn, and even after a heavy snowfall remains black and forbidding. On its northern side the peak must stand about seven thousand feet above the glacier at its base."

The following year Messrs. H. Woolley, H. E. M. Stutfield, and Dr. Collie commenced a more extensive journey into the same region. The latter says :

"On July 31st, we started from Laggan, with W. Peyto as our head man ; Nigel Vavasour, Roy Douglas, and M. Byers, as cook, also accompanied us. We started with thirteen riding and baggage ponies, but within an hour of starting reduced that unlucky number to twelve, for we had to shoot one of the worst of the pack after it had broken its shoulder



The Waputehk Range.
Looking across the range from near Hector.

amongst the dead timber. Instead of following up the Bow Valley as we did in 1897, I determined to reach the Saskatchewan River by way of the Pipestone Pass and the Siffleur Valley, in order that we might investigate Mt. Murchison."

This peak was estimated at not "much over twelve thousand feet high, if as much." Their most interesting work was done much farther north, between the sources of the North Fork of the Saskatchewan and the Athabasca. From the summit of Athabasca Peak, in that region, which they estimated at about 11,900 feet, a magnificent view was obtained. Speaking of this in the *Geographical Journal,* Dr. Collie says:

"Mt. Lyell and Mt. Forbes could be seen far off in the haze. But it was towards the west and north that the chief interest lay. We were looking on country probably never before seen by human eye. A vast snow-field, feeding many glaciers, lay at our feet, rock-peaks and snow-covered mountains were ranged around it, whilst far away to the westward we could just see through the haze the valley of the Columbia River. This great snow-field, from which the Saskatchewan glacier takes its rise, also supplies the ice for another glacier at the headwaters of the Athabasca; whilst to the west we saw the level snows bending over to flow down more than one channel, feeding, when melted, the rivers that empty themselves into the Pacific Ocean.

"A magnificent peak, that is probably near to

fourteen thousand feet high, stood alone keeping guard over these unknown western valleys. We have ventured to name it after the Right Hon. James Bryce, President of the Alpine Club. Some few miles to the north of this peak, and also on the opposite side of the snow-field in a north-westerly direction, the biggest peak of all was seen. Chisel-shaped at the head, covered with glaciers and ice, it also stood alone, and I at once recognised the great peak I was in search of; moreover, a short distance to the north-east of this peak another, almost as high, also flat-topped, but ringed round with sheer black precipices, reared its head above all its fellows into the sky. Here, then, we thought, were Brown and Hooker. Rapidly I drew lines in all directions to these new peaks on my plane-table, but hurry as fast as I could, it was 6.30 P. M. before we started down from the summit of this mountain, which we have named Athabaska Peak. Its height by mercurial barometer is 11,900 feet. It was 10.45 when we got back into camp, to find that Stutfield had killed three if not four sheep. The provision question, therefore, was satisfactorily settled for some time to come.

"The glacier that fed the headwaters of the Athabasca River we have called the Athabasca glacier. Two days later we all three camped with sleeping-bags as far up its right bank as possible, and in the dark at three o'clock next morning started up the glacier by lantern-light. This glacier descends from

the snow-fields above in three successive ice-falls, the last one very much crevassed. It was not till past seven o'clock that we finally emerged on to the snow-fields above. The day was warm and sultry, making us all feel tired. For several hours we walked across the snow towards the high chisel-shaped peak; to the westward Mt. Bryce sent its three peaks high above us into the air. A double-headed peak on the north hid the high rock-peak we thought might be Brown (afterwards named Mt. Alberta) when we were on the top of the Athabasca peak. But the peak we were walking towards was farther off than we thought, and as it seemed very unlikely that we should get to the top of it that day, we turned, after having looked down into a vast amphitheatre that lay between the chisel-shaped peak (afterwards named Mt. Columbia) and the double-headed peak, or the Twins. This amphitheatre is the source of another branch of the Athabasca. To the south-east of where we were, and almost on our way home, rose a great dome of snow. After a hot and very tiring climb through soft snow that broke under our feet at every step, we finally got to the summit at 3.15 P.M. (11,650 feet). Although we did not know it at the time, we were standing on probably the only peak in North America the snows of which, when melted find their way into the Pacific, the Arctic, and the Atlantic oceans; for its glaciers feed the Columbia, the Athabasca, and the Saskatchewan rivers."

Climbing in the Selkirks began somewhat earlier than in the Rockies proper. The reason apparently is that the railroad runs nearer to the mountains in the Selkirks and gives effects of height and grandeur that are only obtained in the eastern range while on camping excursions. Thus the Selkirks attracted the first climbers, such as Green, Huber, and Sulzer, in 1887 or only one year after the railroad was in operation. The absence of trails through this grand but rain-soaked range has, so far, confined the attacks of mountaineers to peaks which are only a few miles from the railroad. The remoter parts of this range are less known than almost any part of the Rockies, where from prehistoric times the Indians have kept trails open in order to hunt and barter their possessions with other tribes. What grand mountain-climbing possibilities the Selkirks may have to disclose can only be judged by the comparatively narrow strip already known.

The summit range has, however, more to offer to the mountain climber. Some of the greatest peaks, like Mt. Forbes and Mt. Assiniboine, have not yet been seriously attempted, and no high peak outside of Mt. Stephen has been ascended twice. There is a group of mountains east and south of Mt. Temple which have never been attempted and should prove fine problems in rock and glacier climbing. Among these are Mt. Hungabee and its higher neighbour Mt. Deltaform, each of which is wedge-shaped and very precipitous on every side that has been seen.

Mount Sir Donald, from Eagle Peak.

The high peaks of volcanic rock, Mts. Vaux and Goodsir, between the Ottertail and Beaverfoot rivers, and some of the sharp summits in the Van Horne Range should soon attract attention. It would be difficult to cover the entire field of mountain-climbing possibilities and the time is not ripe to go much into details. Where each group of mountains has charms of its own there is room for much choice. One principle however seems universally true,—that where the heart has been set on a particular region no other has claims of equal importance.

CHAPTER XIV

KINDS OF GAME ANIMALS IN THE MOUNTAINS — THE ROCKY MOUNTAIN GOAT — A SUCCESSFUL STALK — A DIFFICULT NIGHT ASCENT — HOW GOAT MEAT SHOULD BE COOKED — AN EXPERIENCE ON THE SASKATCHEWAN — MANY GOATS AROUND LAKE LOUISE — INTERESTING ADVENTURE ON A MOUNTAIN CLIMB — THE MOUNTAIN SHEEP — ITS HABITS AND NATURE — SUDDEN APPEARANCE OF A LARGE BAND — CURIOUS INSTANCE OF TAMENESS — SEVERAL KINDS OF GROUSE — THE ALPINE PTARMIGAN — FISHING IN LAKES AND STREAMS — WHERE FISH CANNOT BE FOUND — SOME STORIES ABOUT THE UPPER BOW RIVER — A REMARKABLE CATCH — VARIATION OF FISH IN DIFFERENT LAKES — SPORT AT MORAINE LAKE — ON A RAFT AT THE SPRAY LAKES — LARGE FISH CAUGHT IN DEVIL'S LAKE — FUTURE OF THE ROCKIES AS A RESORT FOR SPORTSMEN

GAME in the Canadian Rockies is moderately abundant. The chief wild animals, besides black and grizzly bears, are moose, elk, deer, caribou, sheep or bighorn, and the Rocky Mountain goat. The several species belonging to the deer tribe are very scarce and hunters rarely bag any of this game. This scarcity is probably due to the rather limited feeding-grounds in the narrow valleys and perhaps, also, to long and severe winters.

About 1840, according to a statement of the

missionary De Smet, the Stony Indians came from the north and settled on the plains near the Bow River. They always have been and are still inveterate hunters, delighting in frequent expeditions into the mountains, where they engage in wholesale slaughter of big game. Fortunately, however, they have been recently compelled to submit to certain laws, which, if enforced for a few years, will make game much more plentiful. The Indians believe in certain cycles of about seven years when the various species of game animals become alternately scarce and more abundant, whether from disease or some other cause is not known.

Among big game the animal most characteristic of the Rockies of Canada and which, from its scarcity in other parts of the country the sportsman is most anxious to get, is the wild goat. This animal at a distance has the general appearance of a goat, though it is a species of antelope and more closely related to the ibex or chamois of Switzerland. It is covered with a dense coat of soft white wool, through which a mingling of longer hair projects, especially on the belly and stout legs. Both sexes have round, black horns six to twelve inches long, slightly curved backwards and very sharply pointed. An adult animal, when cornered, can put up a strong fight against enemies of its own size, and I have heard of an Indian nearly losing his life in a close encounter with an old male. A full-grown goat sometimes weighs more than two hundred pounds. The Indians kill a large

number of them every year for their flesh and hides, which latter they tan into a soft leather. Nevertheless the mountain goat is very abundant and probably actually increasing in numbers.

Its natural environment is among high and almost inaccessible cliffs near the upper limit of vegetation, or in the alps and meadows above tree-line. Rarely do these animals come far below tree-line during the summer. They are apparently slow and clumsy in their movements and have a swinging gait like a bear, a resemblance that at a distance is increased by the fact that they hold their heads very low. In spite of apparent slowness they run over the roughest rocks at a rapid pace and climb with certainty cliffs that are inaccessible to man. They run singly or in groups of from three to seven during the summer months, browsing upon the tender Alpine plants which grow between seven and nine thousand feet above the sea. In some of the lower valleys there are clay banks containing minerals which they travel miles to taste, and the number of tracks leading in several directions show that such " licks " are much frequented.

My first goat was killed near the base of Mt. Assiniboine. West of our camp there was a long ridge of nearly horizontal ledges for the first thousand feet or so from the valley, while the rocks were more precipitous above. On our various excursions we had noticed fresh tracks of goats, while the low spruce and underbrush were in many places covered with tufts of white wool which had been torn from the

animals as they passed. However, no game had been seen till one afternoon, when a goat was observed walking along the cliff a few hundred feet above our level and not half a mile distant. Two of us made off in pursuit, and after climbing to a higher ledge, followed the innumerable gorges and rocky spurs of the mountain-side in the hope of getting a shot. But our game made better progress than we and eventually eluded us altogether. After a three-hours' hunt we returned to camp much disappointed; but while we were at dinner the goat appeared again, this time much higher on the mountain. My companion had had enough, and though it was getting late I determined, after having been once baffled, to have that goat if it was necessary to stay out all night. The animal had scrambled down a number of exceedingly steep places to a narrow shelf below which was a vertical precipice that made him pause. At frequent intervals he would look down as though he wanted to descend the cliff, but there was not the slightest foothold for even such a skilful mountaineer. I watched the animal from the cover of some larches with the purpose of fixing in my mind the outline of a certain snow patch. I felt that the success of the hunt would depend on knowing exactly where the game was when I should come down for a shot. The mountain goat must be stalked from above. Experience has taught them that their chief enemies, bears and panthers, come from below. They pay little attention to anything above them except to run

to cover of some projecting cliff whenever stones rattle down the mountain-side. After the exact outline of the snow patch that marked the position of the goat had been fixed in memory, I set out to scramble up the grassy slope, concealed from possible view of my game. I climbed nearly a thousand feet and then had a difficult scramble among some tremendous crags and rock fragments with dark caverns and patches of treacherous snow between them. Darkness was coming on rapidly under the shadow of the mountain, and the north-western twilight was fading, as it was nearly nine-thirty. The snow was hardening under the frost, and some pools were freezing as I followed a gently descending ledge and saw before me the well-marked snow patch, under which the goat had been standing when I left the valley. Pausing a brief moment to take breath after the rapid climb, I worked over to the cliff edge cautiously but not without disturbing some shaly stones, which pattered down and rattled over the precipice. Aroused by these stones, no doubt, I then saw the goat not far below looking at me with a curiously sullen expression. I aimed, but had sufficient presence of mind not to fire because the foresight of my rifle was making circles around my mark owing to a combination of "buck fever" and the rapid climbing which I had just done. It seemed a long time before I could make proper aim, and then after a flash there was a dull thud far below. Leaning over the cliff I saw the goat at the bottom of the precipice rolling

HEAD OF ROCKY MOUNTAIN GOAT

over and over down the mountain-side. After a circuitous descent I reached the cliff bottom, and found a large hole in frozen snow, where the goat's body had struck after a fall of fully one hundred and twenty-five feet. The poor animal was some distance below, still alive though mortally wounded. I despatched the animal with another bullet, and at ten-thirty started for camp.

It was now dark and the trees and rocks were dimly outlined under the starlight. A precipitous ledge below compelled a détour. Thinking that the end of this had been reached I commenced to descend a rather steep place which at first seemed easy enough. By a succession of groping movements, aided by projecting roots and stones, I lowered myself from one point to another till at length, with one hand firmly grasping a young balsam, I found myself hanging over a cliff supported by one arm. It was impossible to tell how high the cliff might be, which gave little encouragement to jump into the darkness and risk a fall. Just then the rifle began to slip, and a most tiresome struggle ensued to place it securely with one hand while the other supported the entire weight of my body. Though everything seemed fairly safe in going down, the bushes broke or came out by the roots as I tried to climb up, and the smooth stones offered no grip to my fingers. Sheer necessity resulted in success at last after some desperate efforts. Camp was reached toward midnight, and around the blazing fire I told of my successful hunt.

Peyto and Lang took a stout pole in the morning and brought the goat down to camp, where the meat was carefully dressed and laid away in a neighbouring snow-bank. The meat of these animals is somewhat like venison, though it has a musky flavour which is too strong for many palates. However, in my experience, when the meat is broiled, or fried with bacon, and well seasoned with salt and pepper, it is quite impossible to say whether the cook has served goat or the very best mutton. Goat meat should never be boiled or stewed, as the musky flavour is then apparent.

In 1896 Mr. Barrett and I were camped at the forks of the Saskatchewan, a seven-days' journey into the wilds. Our camp was in a small canyon near the turbulent Little Fork, and our tents were placed in an open grove of spruce on a flat gravel bed. On the evening of our arrival Barrett and I, accompanied by Fred Stephens, an experienced backwoodsman from Michigan, and a great hunter, walked towards the Saskatchewan River. Leaving the point where the Little Fork pours its small contribution into the milky flood of glacial waters, we strolled down the valley for a considerable distance, when suddenly our attention was called to a large animal upon the river-bank a mile or so distant. Stephens, who had killed many bears in Montana, declared it was a grizzly. A plan was made at once for Stephens and Barrett, who had rifles, to follow the cover of woods while I made signals as to the location of the animal.

After twenty minutes I saw puffs of bluish smoke and heards shots ring out from the forest, whereupon our game reared up on his hind legs and ran towards the hunters. No more shots were heard, the animal disappeared among trees, and it seemed best to climb a tall spruce to get a better view over the flat expanse of the valley, and, if possible, have a look at the game and hunters. Barrett and Stephens afterwards said, however, that I was not up the tree for any other purpose than to avoid the charge of a wounded grizzly which was coming my way. It eventually proved, however, that the supposed bear was nothing less than a very large goat, which must have weighed three hundred pounds.

This region is frequented by mountain goats, and fresh tracks were to be seen on the Indian trail near our camp. One day a kid walked along the crest of a low cliff within a few yards of our camp. The little animal showed no fear of us, and browsed the grass as it sauntered along. When one of our men fired a pistol several times it only looked startled for a moment. I thought the action of the beast showed supreme contempt for the shooting, which was indeed very bad. The fact of our seeing two goats and many fresh tracks at this low altitude, which was about thirty-five hundred feet below the tree-line, proves that mountain goats sometimes endure the warmth of the low valleys. On a hot summer day the temperature might easily rise to eighty degrees in such a valley, and if the goats remain below at

such times they must tolerate a much greater heat than is supposed.

The abundance of goats in these mountains is well proved by the ease with which the Indians kill large numbers of them, and the very good bags made by gentlemen who have made an earnest effort to hunt them. We killed three and saw, all told, about fifteen on this excursion, where hunting was only a side-issue and engaged in at rare intervals. Two Englishmen, Col. Melleden and Capt. Chartris, killed six goats and five sheep on a three-weeks' hunting trip in this locality.

One of the best places I know for the mountain goat is the group of mountains around Lake Louise. I have seen many of these animals every year in the valley of Lake Louise or on the adjacent hillsides. The magnitude of the mountains and the distance require very sharp eyes to see the animals, though the Indians can pick them out where the white man requires a field-glass. They are not much hunted, and are increasing in numbers in that neighbourhood. In October, 1899, the telegraph operator at Laggan saw a large herd on Fairview Mountain, and a few days later two Swiss guides saw fifteen or twenty on one side of the valley near Mt. Lefroy, and a solitary animal several miles distant the same day. One of the most interesting experiences with goats that has come to my experience occurred on the day following. I had made an ascent of Pope's Peak, a high mountain above Lake Agnes, which

latter the Indians used to call the "Goats' Looking-Glass," and, coming down from the cliffs and dangerous places of the peak to safer travelling, was beginning to experience that comfortable feeling which every mountaineer enjoys after a successful climb when the last hard work is over. It was a perfect day of sunshine, with massive cumulus clouds and the mountains distinctly outlined in clear air. Having reached an altitude of about eight thousand feet, I paused for a few moments to study the great amphitheatre of mountains and the vast sweep of the valley. My eye fell at once on three goats browsing on Alpine herbs of a green slope. I was in full view of them, and the nature of the mountain was such that no concealment was possible. However, by way of experiment, I continued the descent with ordinary caution, and, working over to the left, came down upon them from above. They were altogether absorbed in their pasture, and unmindful of the pattering stones which I disturbed from time to time. Whenever all of them had their heads to the ground at the same time, I ran some distance, crouching under the cover of low bushes, and then waited for another opportunity. The unwary animals paid no heed till, in wonder at their stupidity, I stood up in full view, not ten yards distant from the nearest goat! Even then I received only a sullen look from the old billy. He made a curious picture as he flapped his ears constantly to drive away the pestiferous grey gnats which swarm in

the autumn and which were bothering me likewise. I reached for a large stone, and shied it at him; but he was so close that it went over his back. Then they commenced to run. It is said that mountain goats invariably run up-hill, even in the face of danger, but I was determined not to let them do so. They wheeled to the left, and I likewise, running over rough stones and through scrubby brush as though my life depended on the chase. I got a glimpse of the goats heading up, but I was still directly above them. They saw me and turned back. Then for an interval they were lost to view, and in a few moments they appeared in the valley bottom, loping like wolves over the rough stones and up the opposite slope, pausing to look around in terror before making a final dash for safety. It was not long before they were at my level on the mountain opposite, and then they came to what appeared an abrupt precipice. They seemed to spring into the air and reach a foothold of some kind several feet above them, pause, and leap again. They were not content till they had climbed more than a thousand feet to the summit of a rough crag called the "Devil's Thumb," when they disappeared through a little depression into the valley of Lake Louise on the other side.

The Rocky Mountain sheep or bighorn has similar habits. This noble animal, though somewhat scarce, seems to reach the best development of head and horns in these Canadian Rockies. I have never

seen heads from Montana or the Sierras to compare with the beautiful sweep of horns that is common to sheep killed in these mountains. In speaking of the bighorn John Muir says :

"The domestic sheep, in a general way, is expressionless, like a dull bundle of something only half alive, while the wild is as elegant and graceful as a deer, and every movement tells the strength and grandeur of his character. The tame is timid, the wild is bold. The tame is always more or less ruffled and dirty ; while the wild is as smooth and clean as the flowers of his mountain pastures."

Whereas the mountain goat is clothed in a coat of white wool, the sheep has a thick pelt of stiff and rather brittle hair which, in colouring, harmonizes with the grey and brownish cliffs where he roams. They are more wary than the goat, and require careful stalking. The mountain sheep is less abundant than formerly because the Indians seek them persistently. Fine heads always bring a good price for mounting, and this, in addition to their excellent meat, makes them eagerly sought after.

I have seen the wild sheep only in one part of the Canadian Rockies, though they live sparingly throughout the higher mountains and especially in the foot-hills and Coast range. One day, when we were journeying to the Athabasca Pass, we found ourselves far above timber on a lofty divide between the Saskatchewan and Athabasca. While spread out in single file, our fifteen horses were marching

through a rolling upland pasture in silence. Suddenly a bunch of wild sheep ran upon an eminence not fifty yards distant to look at us. This was a magnificent revelation of animal life. Twenty-seven wild sheep proudly outlined against the sky! Motionless they stood gazing at us in amazement while we studied their graceful forms and curved horns raised high in air. Every rifle was tied to the saddle, as luck would have it, and a long march through rain and wet brush had made unyielding knots in the leather straps. While we were getting at the firearms a miserable pet spaniel, which had hitherto proved utterly unfit to find or recover game, ran forward barking. With a sudden turn the whole band made off, showing their white rumps as they bounded away for miles over the hills.

We hunted them from our camp later. Fred Stephens shot one at long range, but the animal struggled away and fell over some cliffs where it was impossible to follow. The next day two sheep appeared on the mountain five hundred feet above the camp. They were looking at us intently, and no doubt wondering what manner of creatures we might be. Barrett and I made a long détour, and hunted carefully all that day, but were not able to locate them. We saw numbers of sheep on many occasions in this particular place, which is never hunted by the Indians because of a certain superstition about this part of the mountain. A most interesting experience occurred to Barrett one day when he was making a

Head of Rocky Mountain Sheep.

lone mountain climb. It was the first and only time for a month that he had failed to carry his rifle. Descending from the mountain he came upon a young lamb, and presently saw the mother not far distant. Neither appeared much disconcerted by his presence, but moved slowly ahead as he progressed. The lamb actually indulging in various friskings and youthful evolutions at a few yards' distance.

Previous to our visit, which was probably the first made by white men to this place, these sheep had been seldom or never hunted, as the Indians got their superstitions about the region years before. They were accordingly in a state of primitive wildness, which may account for these several instances of tameness in one of the most wary of all wild animals. Subsequently, however, several hunting parties have reduced their numbers.

The moose, elk, and deer are very scarce except in such low and broad valleys as the Vermilion and Kootenay. Few except Indians succeed in bagging these animals. However, most hunters are more eager to get sheep and goats, and little effort has been made hitherto in the way of killing these members of the deer tribe.

Bears, both black and grizzly, are fairly abundant, especially in the Selkirk range, where at Glacier three or four have been seen on several occasions in one day. An immense grizzly was shot at Lake Louise several years ago within a few yards of the chalet, and a number of animals are killed every season by the railroad men.

In seven or eight seasons of marching through these mountain wildernesses, I have seen a bear but once. It is not uncommon to see their tracks, but a bear has acute hearing, and quickly withdraws into hiding upon the approach of a noisy pack-train. The Stony Indians attack them fearlessly. Though they are inferior shots, two alone will open up on a grizzly, and it is often said that they will fight a black bear armed only with hunting-knives. The Stonies, however, are incomparable hunters, and it is their boast that like, Attila, "the scourge of God," beneath whose feet the grass died: "No game can live where we hunt."

In the way of small game, there are several species of grouse and ducks, which are more likely to fill the larder of an ordinary camping expedition than big game. The Richardson and Franklin grouse, with the grey ruffed and Canadian ruffed grouse, are closely related to the pinnated grouse or prairie chicken. They live in the forests everywhere, and are so abundant that they make a large and important item in the way of fresh meat. These birds are excellent eating, being juicy, tender, and well-flavoured. It is hardly fair to call them "game," for they are easily killed by shooting their heads off with a rifle as they roost in the trees. I have taken six in half an hour, armed with stones, though it requires practice to pick them off at first. Black ducks, mallards, and teal are found in such places as the Vermilion Lakes near Banff, and on all rivers and lakes in the lower valleys.

They used to swarm in large numbers at Lake Louise in September and October, but have been less numerous in the last two or three seasons. The ptarmigan is an Alpine bird, found among the bare rocks, eight or nine thousand feet above sea-level in the summer months. Their summer dress is a pepper-and-salt colour with wings nearly white, but in winter is snowy white throughout, while their legs, and even the bottom of their feet, are covered with feathers, possibly as a protection against cold. These birds are of the same size as the domestic pigeon, considerably smaller than the grouse, but similar in flavour. They will remain quiet until one shot is fired, and if this does not take effect, they fly away out of danger, thereby showing superior discretion to their stupid cousins of the woods.

With the exception of goat hunting, it may safely be said, that fishermen have better opportunities of sport than the big-game hunters in the Rockies of Canada. It may be broadly stated that every clear stream abounds in trout if the waters are not too swift. The distribution of fish in the numerous lakes depends on many circumstances, some of which are easily understood; as for instance the absence of fish in lakes of very high altitude, or where a waterfall has made the ascent of streams impossible. But in other rare cases, there are large clear lakes at reasonable altitudes, having fine outlet streams, where there are no fish. The most remarkable place of the kind that I have seen is Fortress Lake,

seven miles long, which empties into the Columbia River.

Some of the rivers are glacial streams, carrying a flood of muddy water from ice-fields of the high mountains, and in these no fish can live. Many streams are rushing torrents or a succession of rapids, swinging from right to left in rapid descent, for miles, with no pools or eddies where a trout might find rest. The upper Simpson and Vermilion are such streams, though fine trout abound in their lower parts. The Bow is an ideal river for mountain trout, with many reaches of deep pools and eddying coves, as it descends through its broad and flat valley, and taking its source in two fine lakes, three or four miles long, both of which teem with large lake trout. Some of the best records in trout fishing have been made in these waters near the source of the Bow. The lakes have only been tried from the shore, because the few parties that have visited them have not had time to build rafts and try the deepest places. Many trout have been caught near the shores of the Upper Bow Lake, which run between eight and twelve pounds. The lower lake also no doubt abounds in large fish, though the only one I ever saw was a two-pound fish I got with a fly, after three minutes' fishing from its rocky south shore.

To give some idea of the fishing in the upper part of the Bow River, where it flows through the muskegs at the base of Mt. Hector, I will first tell my

own experience, and then give some more remarkable records made by others. One day our men were having trouble getting the horses through a muskeg, when, by way of experiment, I took a line in hand with an artificial fly attached and dropped it from an overhanging bank on the water of a deep pool. A three-pound trout rose to the fly and was soon landed. The next carried away my leader, and I had to suspend operations, as our horses were well ahead by that time. In the afternoon I tried some pools above our camp, having no luck at all in some, while others contained several trout. With a red hackle I landed five trout averaging two pounds each from one pool in less than three minutes.

On September 13 to 15, 1898, General Fred Pearson and Captain Dickerson caught the following mess of trout between the upper and lower Bow lakes:

1 fish at	4½ pounds	1 at	8¼ pounds
2 " "	6 "	1 "	8¾ "
1 " "	6¾ "	3 "	9¼ "
1 " "	8 "	1 "	9¾ "

There is no doubt that these Bow lakes abound in lake trout of considerable size. Wilson says that the Indians used to get numbers of large fish when, for some reason, they came into a small stream which enters the lake from the north-west. These fish were driven by shouts into shallow water, and so caught. Where the stream flows out into the lake is a fine

place to fish, and when camped there we caught a great number of two- and three-pound bullhead trout. A camping party, which had just left, caught fewer fish in the same place, but they were all between eight and ten pounds.

The fish in each mountain lake have certain peculiarities of size or colouring. In Lake Louise the trout are from one-half to one pound in weight, and no large fish have ever been caught. They are brook trout, similar, except in lighter colouring, to those in the brawling outlet stream. Moraine Lake, east of Mt. Temple, abounds in very gamy trout, the size of which was quite uniformly between fifteen and seventeen inches in length. So far as I know, this lake had never been visited before the summer of 1899, when Ross Peecock and I camped there several days. Here is a lake full of fish, which we reached in six hours' travel from Lake Louise, and that, too, by driving our pack-horses through the pathless woods. If a trail were cut through the timber, sportsmen could no doubt reach this splendid lake in three or four hours. This gives an instance of the comparative wildness of the mountains, and their wonderful possibilities in the way of sport, which have not been developed hitherto. We found another larger lake some ten miles further south, which drains into the Little Vermilion Creek, where the fish were numerous, but of smaller size, averaging a pound or more. They resemble rainbow trout, but were very highly coloured and their gills fiery red.

There is a lake about a day's journey from Banff, in the valley of Forty Mile Creek, where sport is impossible because the fish are too numerous. I have never seen it, but old timers around Banff agree that in this place several fish dash to the fly at one time, so that after a few minutes, fishing seems more like slaughter than legitimate sport.

One of the best places for lake trout is in the Spray Lakes, a day's march from Banff. This is on the route to Mt. Assiniboine, and on my second journey to that region we camped by the largest of them, called Trout Lake. Mr. Bryant and I got on a raft, which the miners from Canmore had built, and after paddling out into the lake, tried the fly-fishing. Fish of one to two pounds rose to the fly, and we soon got a large number for lunch. In the afternoon we anchored the raft where a large stream enters, and while Bryant used the fly I rigged up a large hook and strong line, and after baiting with a piece of fresh fish, dropped the hook over. The current carried out fifteen or twenty yards of line and swept the hook along the bottom, until, in a short time, there came a violent tug, as though a log had caught the hook. But this was a very different pull, and I had to let out fathoms of line. A big fish was on, and he was rushing madly in every direction, sometimes coming nearer, when some slack could be taken in, then away again, while the straining line whipping through the water threatened to break at any time. In fifteen minutes a lake trout

that weighed fully nine pounds was landed on the raft and killed. Three more were caught in the first hour, one of which was a ten-pound fish. Bryant got one with his trout rod, deeming it better sport than a hand line, and so it proved. It was a twenty-minute fight between a large fish, his line, and supple rod, which was bent double, and never recovered the strain of that day. It was a glorious sight, as the declining sun was playing over the broad waters of the lake in the majestic calm of evening, to hear the whiz of the line and the sound of the reel, with our friends on the shore shouting: "Go it, old man, hang on!" till at last another fine prize was captured. We packed all our spare fish in a wooden box in cold moss and had enough to supply the hundred or more guests at the Banff Springs Hotel.

Roughly speaking, the size of trout in the Upper Bow Lake, the largest of the Spray Lakes, and Lake Minnewanka, near Banff, is proportional to the size of the lakes themselves. Lake Minnewanka, or the Devil's Lake, is eleven miles long, and the fish are both numerous and of great size. A trout weighing thirty-three pounds held the record up to 1896, or later; but all records were surpassed by a fish caught in 1899 by Dr. Seward Webb, which tipped the scales at forty-seven pounds! The total weight of fourteen fish caught in this lake one day by two sportsmen was forty-three pounds. Sixteen caught the following day weighed forty-eight pounds, or an average of about three pounds to each fish. I have

heard that the Indians sometimes bring in fish of unusual size from the Kananaskis Lakes and other bodies of water remote from the railroad; but this information is second-hand and like all such, especially in regard to fish, somewhat influenced by imagination.

Generally speaking, the sportsman should expect to kill in these Canadian Rockies no big game outside of the mountain goat and sheep. With a well directed effort in a proper region, especially if an Indian hunter can be persuaded to assist him, he will stand a very fair chance of securing sheep, and almost a certainty of bagging several goats. The hunter will have to rough it, and may find the vicissitudes of mountain travel more trying than anything to be encountered in the woods of Maine or eastern Canada. Moreover, the pursuit of these mountain-loving animals requires steady nerves and considerable practice in climbing. Such matters add zest to the chase and the reward is fairly certain.

For the fisherman there is an unopened wilderness full of fine streams and clear lakes, in the great majority of which fish abound. Emerald Lake and Lake Minnewanka are easily accessible; but most of them are as yet only to be reached by rough trails, or by forcing a passage through the forests. The remote bodies of water are, of course, not supplied with boats, and some, which are only three or four hours' journey from the railroad, have never been fished;

so that the sportsman, to get the best results, must resort to rafts of his own construction, or carry a collapsible boat. However, the waters of all these mountain lakes are deep, and sometimes excellent fly-fishing may be had from their rocky shores.

CHAPTER XV

HOME OF THE STONY INDIANS — INFLUENCE OF AN EARLY MISSIONARY — THE INDIAN VILLAGE — TREATY WITH THE GOVERNMENT — POWER OF THE STONIES IN WAR — THEIR CHIEFS — SCHOOLS AND EFFECTS OF EDUCATION — RELIGIOUS TEMPERAMENT — QUAINT SUPERSTITIONS — ANECDOTE ABOUT EDWIN THE GOLD-SEEKER — LOVE OF MUSIC — MORALITY OF INDIAN WOMEN — ABSTINENCE FROM ALCOHOL — INDIAN PONIES — A BEAR STORY — NEW YEAR'S DAY CELEBRATIONS — WHERE THE STONIES GET THEIR COURAGE

THE Stony Indians, a tribe unique in their manner of life and ideas, live on the borders of the great Canadian plains not far from the base of the Rockies. They have few traditions. Except that they are a branch of the Sioux, no one knows whence they came; but during the last half century at least they have held the foothills of the Rockies for a home and have used the mountains as a hunting-ground. The Stonies have the reputation of being the fiercest fighters among the north-western tribes, and have cruelly punished their enemies, the Blackfeet, in many encounters on the plains.

About fifty years ago, when the first explorers came in search of a route across the continent, this

territory was alive with savages. Each cloud of dust in the distance, or band of horsemen scurrying like wind over the plains, was a cause for instant alarm, and no traveller was assured of safety except in arms or the good will of the Stonies; for the Stonies then, as now, were friends of the white men.

Whatever may have been the cause of this friendship for the invading whites on the part of the most influential Indians in the north-west, it is certain that they owe much of their religious education to a godly man, Mr. Rundle, a Methodist missionary, who came among them about sixty years ago. To this day the older members of the tribe cherish his name with love and feel a bond of sympathy for all white men through this good man's influence; for, "Did he not come among us," they say, "a poor man and go away likewise, leaving us richer?" It is partly owing to the impression of this early missionary's remarkable personality, but certainly also to some native strength of character, that they have such unusually good traits. The Stonies are exceptionally faithful; they cannot be tempted to steal, they are true to their word, and, more incredible still, they have an abhorrence of alcohol.

Their reserve is a beautiful place in the terraced valley of the Bow River, near the little railroad station of Morley. The surrounding hills are covered with a scant turf, only green during May and June, soon to be parched by summer drought, and then frost-bitten for half the year. Clumps of rough

In the Enemy's Country.

Douglas firs crown the rounded hilltops or grow on the sides of ravines, and every tree leans eastward as a result of the unceasing west winds.

The Indian village is on a small plain among wooded hills, about a mile from Morley. It is a collection of simple wooden houses which the Indians have built for themselves, though some still use the primitive teepee. During a recent visit I made my first call on Tom Chiniquay, a chief's son, to take pictures of himself and his wife. In his house were tanned skins, beadwork and embroidery, as well as illustrations and cheap prints from our periodicals. In a cupboard were some iron tools and other evidences of civilisation. Chiniquay arrayed himself in a gorgeous costume of ermine and otter fur, and put on a magnificent head-piece of eagle feathers, with the sharp, black horns of the mountain goat on either side. After the ordeal, Chiniquay charged me a dollar for the privilege of photographing him, notwithstanding an old friendship between us. I have never learned whether this charge resulted from the fact that he is a chief's son, or because of a certain debt at the "store" for which his costume had been mortgaged.

The relations between the Canadian Government and the Stony Indians have been always happy. At a great council of the tribes, held many years ago, in which the Blackfeet, Piegans, Sarcees, Bloods, and Stonies took part, a treaty was made with the Stonies that "so long as the river flows" they are to receive

rations of beef, flour, tobacco, clothing, and money, in return for the lands of which they have been dispossessed. The Stonies have behaved themselves, the Government has kept its promises, and everyone is satisfied.

There are three Stony reserves in the north-west, but this one at Morley is the most important. At this place there were 581 Indians in 1898, and by natural increase 602 a year later. Though so few in number, the Stonies have exercised strong influence on the other tribes, due perhaps to their prowess in war; and nearly every enterprise the Indians have undertaken, whether lawful or otherwise, has been a success if the Stonies joined and a failure if they did not. Thus the Riel rebellion, in 1885, though serious for a time, lost considerable importance when it was known that the Stonies would not lend their assistance.

The Stonies have some cousins on the plains, the Assiniboines, who are arrant knaves, liars, and horse-thieves, with none of the good traits of their relatives, and nothing in common with them except a similar tongue. All the Indian tribes of these western plains have become more or less united by a century of the fur trade which brought them together in a peaceful way. The Stonies, like the others, are scattered in separate bands, the purest blood being at the Morley reserve, amalgamated, however, with the mountain Crees, and are at best merely shattered remnants of a tribe that has been repeatedly decimated by war and smallpox.

There are three chiefs in this band, and upon the death of any one, another is chosen by the Indians to be approved by the Government. Numerous petty marks of distinction—a larger house, or a more gorgeous costume on festal occasions—are the insignia of their authority, which is not very great and is limited to such matters as the choice of camping-places on their marches, a weightier influence in council, and leadership in time of war. One day of my visit, Chief Chiniquay came to the agency on a matter of business. There was nothing, however, in his simple blanket costume and knife-belt to distinguish him from the others. But such was his dignity and reserve that no suggestion was made to take his picture, especially as this chief clings to the ancient superstition about the camera: that it shortens life, or at least takes away some portion of health.

The Indians on this reserve have very good educational advantages. There are two day-schools near the village and a boarding-school some six miles distant, which has accommodation for about forty scholars and is supported by the Methodist Church. At each school the children are taught simple arithmetic, geography, and the English language. There are also opportunities for special studies, such as housework for the girls and farming for the boys. The Stonies are ambitious for their children, because education gives them standing among their fellows, and they feel that ability to act as interpreters, read

the papers, or write messages home when on their journeys is no small distinction.

But it cannot be said, in all fairness, that this simple education is always beneficial. No race can jump a thousand generations, or even a thousand years, and feel no shock. Education tends to the Indian's betterment in many cases, but frequently also to his downfall. The study of farming is all lost on the Stonies, because the climate of their country, situated two hundred miles north of Montana and four thousand feet above the sea, is not favourable to the cultivation of even hardy vegetables. Moreover, they have a strong prejudice against agriculture, and for them to dig in the ground is degradation. There are, however, pleasing exceptions to this tendency to relapse from education. Some of the young Stonies speak English perfectly and show by their ideas at they are not only ambitious but progressive.

The most surprising moral trait of the Stonies is their sincere religious feeling, a result of early missionary work. They attend church voluntarily and regularly, keep the Sabbath strictly, and even go to the length of private prayer-meetings at home. The Christmas festivities begin with a church service, and even their names, such as "Job Beaver" or "Enoch Wildman," which are sometimes acquired from personal traits or circumstance, also prove their familiarity with the Bible.

The Stonies show many of the paradoxes of a savage tribe in a transition stage. Striking contrasts

A TYPICAL STONY INDIAN

of ideas often occur in the same individual, which at times almost cause a distrust in his sincerity. Inherited superstitions take deep root in human nature, and till we ourselves learn to disregard the new moon over our right shoulder, thirteen at table, the bad luck of Friday, and such petty self-delusions, whose influence we feel for good or evil, we should not be too severe in judging the Indian.

Some beliefs of the Stonies are, however, very interesting, and none more so than certain superstitions in regard to their hair, which, by the way, are strangely like those of the Hawaiians and South Sea islanders. A lock of hair in the possession of an enemy is a cause for great anxiety, because therein is believed to lie the power of life and death over the victim. So strong is this feeling that even a good Indian would shoot and kill, without a moment's hesitation, any one attempting to clip a lock of hair from his head. Many of their beliefs, however, are harmless: such as the idea that each mouthful of salt takes a year from life, and that it is very bad luck for a man to touch any article of a woman's clothing. The younger women are subject to strange cataleptic fits and fainting spells, during which their bodies become apparently lifeless and rigid as iron. There is little doubt that the medicine men have a hypnotic influence which is the cause of much that is incomprehensible to the Indian mind. These sorcerers pretend to drive away the evil spirits by charms, accompanied by an unending beating of drums and mournful

chants, continued day and night, till the patient either recovers, owing to unusual vitality, or dies, which is more often the case. Much of this gross superstition is dying out and now exists only among the weaker individuals and women in the secrecy and fear fostered by the medicine men, who, in any event, receive large payment for their services.

The Indians have a superstition about minerals. One of the first white men to prospect along the Bow River was named Joe Healy. After much difficulty and many promises of blankets, flour, and tea, he induced an Indian named Edwin, the Gold-Seeker, to show him a place where there was copper ore. The other Indians shook their heads and said the spirits would be angry and that something would surely happen to Edwin for disturbing the minerals. But when autumn came, and the snow began to fall, Edwin and his family had new blankets and plenty of flour in their teepee. Then the others talked it over and said: "Perhaps the spirits will not be angry. We know where there is money in the rocks, and when the snow goes we will show it to the white man. Then he will give us horses, blankets, and flour." But one calm night a few weeks later some of the old men were grouped round a campfire on the flats by the river, and Edwin was standing before them, telling about an exciting buffalo chase. Suddenly he fell over almost into the fire. The others rushed to help him, but he was dead! Heart disease—the Indian agent said it was. The

old men smiled sadly and said: "In the springtime when the snow melts we will not show the white man where there is money in the rocks."

The Indians, though remarkably bad artists themselves, are very fond of music. They often come to the agency to hear the piano or the graphophone, the latter a marvellous invention of the white man which they do not comprehend, and in admiration say, "We do not understand whether this is God or the devil speaking."

The women are very strict in their ideas of morality and rarely or never travel alone. Unless her husband is present a woman will always leave a room or teepee when a stranger enters. Though family quarrels sometimes occur, the Stony women make faithful and loving wives. Their position is higher than among most Indians, as the family tie is not easily broken, and labour is so divided that some of the work is done by the men. The women dress and tan the skins of moose, sheep, and mountain goats, making them into the most beautifully preserved leather to be found in the North-west. They have charge, too, of the family treasury, and no husband will ever close a bargain without first consulting his wife. On hunting trips the women do the cooking and set up the teepees, which require thirteen slender poles stripped of their bark. To the men falls the excitement of hunting no less than the labour of the chase, which, among the heights of the Rockies, is exhausting and often dangerous.

Strict abstinence from alcohol and other vices has given the Stonies health and vitality that make their numbers increase, while other tribes are dwindling away. But among all primitive peoples imported diseases find a virgin soil, and the Stonies likewise have suffered terribly from measles, smallpox, and consumption. An old Indian acquaintance of mine, William Twin, once told me pathetically that he could sleep no more from thinking about the death of his wife and children, and then added, "Only one little boy left now — if little boy die, no longer want to live, me."

The Stonies' welfare in peace and their lives in war depend on their horses, and it is little wonder that they take the greatest pride in them. For many years past they have obtained good horses from the Kootenay Indians in British Columbia, so that they have always had the best animals of the western tribes. They have recently imported eastern stock to improve their undersized ponies.

They have few amusements, but are very sociable, and nothing pleases them more than to recount their adventures in a kind of gesture language which is comprehensible even to a stranger. It is not uncommon to see an Indian on his knees, before an attentive group of listeners, carrying out in pantomime every detail of some exciting adventure, and with words half chanted and voice like one calling from afar, relating the circumstances of hairbreadth escapes or deeds of heroism.

A STONY INDIAN MOTHER AND CHILDREN

Among many hunting stories, the following well illustrates their courage: A young brave named Susie was encamped with his family in the Porcupine Hills east of the Rockies. After hunting sheep and goats all day, he was returning to his teepee and upon entering an open forest glade came unexpectedly on a huge grizzly bear. He fired, though too quickly for good aim, and only wounded the bear in the fore foot. Walking backwards, and trying to get another cartridge in his rifle, he stumbled on a log and fell. The bear jumped upon him before he could recover. Then ensued a fight to the death. The Indian turned on his side and seized the bear's ear with his left hand. In the other he held his Hudson Bay hunting-knife, a formidable weapon like a small sword, and with this kept striking the bear on face and neck. Biting and clawing, the infuriated animal reared on his hind legs several times in an effort to throw the Indian from him. At length both contestants, weakened from loss of blood, fell to the ground, when Susie, with a desperate effort, drove the knife between the bear's shoulders, but had no strength to pull the weapon out. Maddened with pain, the bear gave his head a great toss and threw the Indian several yards to one side.

On the following morning Susie's people began to search for him. Within a few yards of the dead bear the Indian was found and carried back to camp. There they dressed his wounds and roasted the feet

of the grizzly, that he might eat them and become a mighty hunter, for by eating the bear's feet the spirit of the animal would enter and give him courage. When asked what he thought about while the fight was going on he said: "I was thinking—why is a bear's ear not long like a deer's?"

The great feast of the year is at New Year's. Every effort is made by the hunting parties to get back from the mountains before then, while those on the reserves spend weeks in preparing magnificent costumes of fur and beadwork for this occasion. Upon the festal day all the Indians of the reserve assemble in two bands, each led by a chief. After a volley from firearms, the two bands come together and pass each before the other, while during the performance of this manœuvre every Indian—man, woman, or child—salutes every other with a kiss. Thereupon they repair to the largest house and have a magnificent banquet, their white guests being first served with articles of civilisation, while the Indians feast on pemmican made of the meat of bear, moose, or sheep mixed with fat, sugar, and wild berries. Then follow horse-races and manœuvres of various kinds, which, together with the award of prizes to the best-looking squaws, and athletic contests, consume the day. In the evening there is a ball with primitive music, where the dancers are urged on by shuffling of feet and an unending "Hi-i-i-i!" from the spectators, while the excitement increases till at length, as in a tarentelle, the participants are ready to faint from

exhaustion. Though there is much that is uncouth and savage in these gatherings, there is no disorder, and the stranger will be kindly and hospitably entertained by his decorated hosts.

The Stonies give an example of what has been true throughout the world's history,—that hill tribes and mountain peoples have always been fierce, independent, and unconquerable. The Stonies get their courage among the perils of the Rockies, where on hunting trips they have to ford rapid and dangerous rivers, or climb the precipices of the highest peaks and face the cold and storms of dizzy cliffs where the mountain goat and bighorn live. They have physical courage to attack the grizzly single-handed, or engage twice their number in battle. These admirable qualities, with their honesty, sobriety, and much that is best in civilisation, give a new hope for all Indian tribes through their example.

APPENDIX

FACTS OF INTEREST ABOUT THE LAKE LOUISE REGION

THE following information about trips to points of interest near Lake Louise will be useful to visitors.

To those having but one day to spare, it would be well to take a boat and visit the south end of the lake. If this is done in the morning, the afternoon might be devoted to an ascent of The Saddle, on foot, or with ponies. From this point a magnificent view of Paradise Valley and Mt. Temple may be had.

By those having two or three days, the following additional trips should be made: (1) To Lake Agnes, and possibly the Lesser Beehive; or even an ascent of Mt. St. Piran. (2) To the glacier, or beyond it to the end of valley and cliffs of Mt. Victoria.

A fair estimate of the time required by pedestrians, in good training, to reach several points of interest will be given below. Women and those not accustomed to walking will require one-half more time than the estimates given.

From the chalet to end of lake by boat, 20 minutes; by trail, round lake, 25–30 minutes; to bridge beyond lake by boat and then by trail, 35–40 minutes; to the end of glacier (follow close to north side of stream to avoid rock-slide beyond bridge), 50 minutes; to walls of Mt. Victoria, 1 hour and 45 minutes.

From the chalet to Mirror Lake (850 feet ascent), 25–30 minutes. (The trail divides a short distance from the lake. The trail to the left leads to Mirror Lake and thence by the base of the Beehive to Lake Agnes, the last twenty feet being too steep for ponies or heavy persons. The other trail does not pass Mirror Lake, but ascends sharply and comes down on Lake Agnes from a higher slope. The scenery on this trail is better than the other, but the last part of the route is impracticable for horses.) To Lake Agnes, 40–50 minutes; to summit of Beehive,

1¼ hours. (It is better to follow the north shore of the lake and then, skirting round the shore to the left, commence the ascent by the steep grassy slope.) To summit of St. Piran, 1¾ hours; return, 40 minutes. To summit of Pope's Peak, 3¼–4 hours. (Ascend amphitheatre beyond Lake Agnes and climb slopes to the right till an altitude of seventy-nine hundred feet is reached, where a diagonal gully is seen leading through first cliff. When the top of the cirque is reached, find a route among broken limestones on west side of peak to the top.)

From the chalet to The Saddle (1850 feet ascent), 50–60 minutes. (Walk from new hut in a straight line one hundred yards to edge of cliffs for the best view.) To Saddle Mt., 1¼ hours. (From The Saddle this is a short scramble over great ledges and at the top a thrilling view may be had into Paradise Valley from a vertical precipice.) To summit of Fairview Mt., 2 hours. (One hour from Saddle. Keep to the right.)

From the chalet, through woods to entrance of Paradise Valley, 1¾ hours; to upper end of valley, 5 hours. (From there to summit of Mt. Aberdeen 3½ hours, or of Mt. Temple 5 hours.) Through woods to entrance of Desolation or Wenkchemna valley, 4 hours. (The openings of these two valleys are on almost the same level as that of Lake Louise.) To Moraine Lake 5½, 6 hours. To lake in Consolation Valley, 6 hours.

From Hector to O'Hara Lake with horses, first time 8 hours, second 6 hours, on foot 5–6 hours. Returning with horses 5½ hours, on foot 4 hours.

From the upper end of Paradise Valley you may enter Desolation or the Wenkchemna valley by high passes on the north and south of Pinnacle Mt. The pass to the south offers a quick route to the valley end, whence by a pass between Hungabee and Deltaform a descent may be made into Prospector's Valley or the head of the Vermilion. A snow pass leads from this into the valley of Lake O'Hara. Such a trip would require a camp or bivouac in Paradise Valley, and again near O'Hara Lake. All the passes are too rough for horses.

Moraine Lake and Consolation Valley may be visited from Paradise Valley over these passes, or else by a traverse through the woods from the chalet, north of Fairview and Temple. The latter journey may be made with pack-horses by beating a way through the woods on a nearly level traverse. I think both

passes at the head of Consolation Valley will be found possible to cross on foot. The one to the south-east leads into a valley containing a lake three miles long and full of fish. The other leads into the Bow valley, and to a smaller lake near the miners' huts opposite Eldon.

O'Hara Valley may be visited from Hector station. Follow the north side of stream in a sharp ascent to the top of the valley opening. Find a log shortly after to cross stream, and follow around south shore of the two small lakes. The trail soon crosses to north side, but is lost in open burnt timber country. After a mile or so it comes back in green timber to south side on a ridge above the cataract. The trail makes several crossings in the next mile, and is very hard to locate, but after that it remains on the south side all the time. The trail leads to within less than a quarter mile of the lake, but turns to the right to a pass into the Ottertail.

NOTES ON CAMP LIFE

Equipment: — A tent with walls at least thirty inches high, seven by nine feet, is a convenient size for two or three. One four-point Hudson Bay blanket for each member of the party, and a sleeping bag to go inside, made of some lighter blanketing. A canvas sheet to lay bedding upon and keep out dampness or cold. In setting up tent, select dry, smooth ground and face tent so as to have probable wind sweep across the opening. Smoke from fire will then be carried to one side. If ground is rough or damp, cut balsam boughs, and make bed by commencing at upper end of tent and lay a row of branches with all the stems pointing towards the open end. Commence second row about six inches below, and have the natural arch of branches placed convexly. If properly done, all the large branches will eventually be at the bottom and a springy bed will be obtained. Let each man have his own place to sleep in, and do not walk on another's blankets at any time. In rainy weather, roll up blankets to head of tent and use to sit upon. Sun and air blankets whenever possible. A pillow may be improvised at night from the bag of extra clothing, sweaters, or coats not in use. Air pillows are very comfortable and portable. Have the space at lower end of tent on either side reserved for boots, cameras, leggins, and other articles of this nature, but keep an

open space for entrance and exit. If the tent leaks in wet weather it is not properly put up. Have it tight and free from wrinkles, and do not touch the canvas in rainy weather.

Personal effects: — One serviceable suit of strong material. A canvas coat for wet weather. At least two pairs of strong boots that have been broken in before the trip is made, well hobbed with steel or Swiss nails. A pair of slippers or easy shoes for camp. In fall or wet summer weather some kind of heavy rubber overshoes and woollen socks are the only sure preventative of wet and cold feet. Army leggins or spat puttees are almost indispensable. A light felt hat to shade eyes from sun and snow-blindness. A heavy woollen sweater, with high neck woven whole and long sleeves, is a most useful garment. One or two pairs of buckskin gloves. Two or more changes of underclothing of rather warm material and one of lighter. Vaseline for boots and hands, lanoline for sunburn, shaving and toilet articles, and a small, round looking-glass. A small kit of tools, containing a file, gimlet, nippers, sandpaper, fish-glue, brads and screws, is a handy thing if you carry cameras or scientific instruments of any kind. Some kind of mosquito oil containing tar and pennyroyal will be useful in calm weather, or on fishing trips. Mosquito nets, or a yard of the material itself to wind round the neck and face, will be needed in early summer.

Instruments: — An aneroid and compass are indispensable for all exploratory work and mountain climbing. A prismatic compass or regular plane-table and steel tape are best for rough survey work. A small pocket thermometer and field-glasses might be added to the outfit.

Notes on breaking camp: — Get up immediately on announcement that breakfast is ready, and do not delay your friends or the cook by taking an unusual time in dressing. After breakfast, put all your dishes neatly in one place where the cook can find them without trouble. While the men are making ready, roll up your blankets and tie them if they go as side packs, otherwise fold and lay on ground. Arrange next your gunnisack of personal effects. Take some kind of lunch to eat on the trail, no matter how short the march is to be, or how little you may feel like eating at the time. Prepare your lunch at breakfast time, and do not ask the cook to open up his boxes and bags the last minute. See that the cinches and bridle on your

saddle-horse are all right a few minutes before all is ready to march.

Notes on making marches: — In midsummer, the outfit should be ready to march at eight o'clock. This gives a long day and the coolest part of it. Do not march more than six hours except under unusual circumstances. In long, hot marches it is sometimes best to break the journey by an hour's rest, during which time the packs are thrown off and the horses can feed a little. A fire can be made and tea served. Otherwise the men arrive in camp tired and hungry to find some of their hardest work before them. On the march, the saddle-horses should be mingled among the pack animals, and each one in the party should help drive one or two of them. Tie their heads up, if they feed persistently along the trail and delay the outfit. Do not frighten your horses if they run off into the brush, as they get worse, each time. Remember that the packs are heaviest and the horses' backs most tender at the beginning of any trip, and that you can travel twice as fast coming home.

Notes on making camp: — Decide approximately about where you want to camp, and tell the head packer to look out for a good camping place within certain limits of time or distance. Wood, water, and dry ground with a pasture near, are prime requisites. When the horses have all been tied to trees, unsaddle your own animal and turn him loose unless he requires to be hobbled. Treat your horse gently and kindly, and you may walk up to him at any time. Never make a sudden movement to catch the horse or the reins. Move slowly and unconcernedly, so that your pony is unconscious of what is going on. Camp should be made by two o'clock. This allows time for the men to make a proper camp and do whatever cooking is necessary, and also gives an opportunity for short excursions in the region of your camp.

HISTORICAL FACTS OF INTEREST

1793. On the 22d of July, Alexander Mackenzie reached the Pacific coast in latitude 52° 20′ 48″ after having crossed the Rockies by way of the Peace River. This is the first recorded overland journey across the continent of North America.

1809. Jules Quesnel, Simon Fraser, and John Stuart leave a

station in New Caledonia (now British Columbia) and descend a river supposed to be the Columbia. The mouth of this large stream proved to be three degrees north of that of the Columbia, and was named the Fraser River.

1817. Ross Cox with a party of eighty-six persons, including Europeans, Indians, and Hawaiians, leave the colony of Astoria at the mouth of the Columbia, and, ascending that river, cross the mountains by the Athabasca Pass. Some of the party, too weak to continue the journey, retreat down the Columbia. The last survivor from death by starvation was reduced to cannibalism.

1827. The botanist, David Douglas, ascends the Columbia and crosses the Rockies by the Athabasca Pass.

1841. Sir George Simpson, on the first overland journey round the world from east to west, crosses the mountains by the Devil's Lake, Simpson Pass, and Kootenay River, under the guidance of an Indian named Peechee.

1858. Gold is discovered in the upper waters of the Fraser River. This leads to a rapid increase of population in British Columbia and the building of waggon roads.

1857. The Palliser expedition is set on foot by Her Majesty's Government. The three objects of this expedition were to find a shorter route between eastern and western Canada, to explore the western plains, and to find one or more passes across the Rocky Mountains south of the Athabasca Pass, but still in British territory. Besides Captain Palliser, who was in charge, the expedition consisted of Dr. Hector, Lieutenant Blakiston, Mr. Sullivan, and M. Bourgeau. On this journey Dr. Hector crosses the Vermilion and Howse passes and discovers the Kicking Horse Pass, so named by his men from the circumstances of a severe kick which he received from his horse at a point near the mouth of the Beaverfoot River.

1862. Viscount Milton and Dr. Cheadle cross the mountains and descend the north branch of the Thompson River.

1867. The colony of Canada unites with New Brunswick and Nova Scotia to make the Dominion of Canada. The Hudson Bay Company sells its rights to the central and north-western parts of British North America.

1871. British Columbia enters the Dominion of Canada, and the first survey parties for a transcontinental railroad commence work.

1880. The Government gives up its efforts to construct a railroad, and the enterprise is turned over to a corporation with Sir William Van Horne in control.

1883. Captain Rogers discovers a pass which now bears his name, through the Selkirk Range.

1886. The Canadian Pacific Road is completed, and the first through trains begin to cross Canada.

LIST OF FIRST ASCENTS OF SOME MOUNTAINS OVER NINETY-FIVE HUNDRED FEET HIGH

1887. Mt. Stephen, 10,428 feet, by J. J. McArthur.
1888. Cascade Mt., near Banff, 9796 feet, by J. J. McArthur.
1889. Three Sisters (highest peak), 9730 feet, by J. J. McArthur.
1890. Mt. Bourgeau, 9487 feet, by J. J. McArthur.
" Storm Mt., 10,330, by St. Cyr.
" Fatigue Mt., near Simpson Pass, 9667, by J. J. McArthur.
" Wind Mt., near Canmore, 10,100, by St. Cyr.
1891. North end of Castle Mt. Ridge, 9546, by J. J. McArthur.
" Station south of Mt. Hector, 9830, by J. J. McArthur.
" Station north of Mt. Hector, 9885, by J. J. McArthur.
" Panther Mt. (Lat. 51° 31,′ Long. 115° 40′ W.), 9565, by J. J. McArthur.
" Peak north of Cascade Mt. (Lat. 51° 21′ 30″, Long. 115° 31′), 9560, by J. J. McArthur.
" Bonnet Peak. At headwaters of Cascade River and Baker Creek, 10,260, by J. J. McArthur.
1892. Peak south-east from Hector station, 9525, by J. J. McArthur.
" Station 18 on North Branch Kicking Horse River, west of Mt. Balfour, 10,400, by J. J. McArthur.
" Mt. Owen, in Ottertail Range, 10,000, by J. J. McArthur.
1894. Mt. Aberdeen, 10,450, by L. F. Frissell, S. E. S. Allen, and W. D. Wilcox.
" Mt. Temple, 11,607, by L. F. Frissell, S. E. S. Allen, and W. D. Wilcox.
1895. Peak north of Little Fork Pass, 10,150, by W. Peyto and W. D. Wilcox.

1896. Mt. Hector, 11,205, by P. S. Abbot, C. E. Fay, and C. S. Thompson.
" Peak between the Saskatchewan and Athabasca rivers, 10,000, by R. L. Barrett and W. D. Wilcox.
1897. Mt. Lefroy, 11,115, by J. N. Collie, H. B. Dixon, A. Michael, C. E. Fay, C. L. Noyes, C. S. Thompson, H. C. Parker, J. R. Vanderlip, and Peter Sarbach.
" Mt. Victoria, 11,260, by J. N. Collie, A. Michael, C. E. Fay, and P. Sarbach.
" Mt. Gordon, 10,600, by J. N. Collie, H. B. Dixon, A. Michael, C. E. Fay, C. L. Noyes, C. S. Thompson, H. C. Parker, G. P. Baker, and P. Sarbach.
" Mt. Sarbach, 11,100, by J. N. Collie, G. P. Baker, and P. Sarbach.
1898. Mt. Balfour, 10,845, by C. S. Thompson, C. L. Noyes, G. M. Weed.
" Mt. Niles, 9700, by C. E. Fay and C. Campbell.
" Athabasca Peak, 11,900, by J. N. Collie and H. Woolley.
" Diadem Peak, 11,500, } by J. N. Collie, H. Woolley,
" The Dome, 11,600, } and H. E. M. Stutfield.
" Thompson Peak, 11,000, by J. N. Collie, H. Woolley, and H. E. M. Stutfield.
1899. Pope's Peak, 9825, by W. D. Wilcox.

LIST OF FIRST ASCENTS OF SOME MOUNTAINS OVER NINE THOUSAND FEET HIGH IN THE SELKIRK RANGE—PREPARED FOR THIS WORK BY PROFESSOR CHARLES E. FAY

1888. Mt. Bonney, 10,625 feet, by W. S. Green and H. Swanzy.
" Green's Peak, 9700 feet, by W. S. Green and H. Swanzy.
1890. Mt. Sir Donald, 10,645 feet, by E. Huber, C. Sulzer, and H. Cooper.
" Uto Peak, 9500 feet, by E. Huber, C. Sulzer.
" Mt. Purity, 10,100 feet, by E. Huber, H. W. Topham, and Mr. Foster.
" Swiss Peak, 10,600 feet, by C. Sulzer and a porter.
" Mt. Fox, 10,000 feet, } by H. W. Topham and two
" Mt. Donkin, 9700 feet, } porters.

1890. Mt. Sugar Loaf, 10,250 feet, by E. Huber, H. W. Topham, and Mr. Forster.

1893. Eagle Peak, 9200 feet, } by S. E. S. Allen and
" Mt. Cheops, about 9000 feet, } W. D. Wilcox.

1895. Mt. Castor, 9200 feet, by P. S. Abbot, C. S. Thompson, and C. E. Fay.

1896. Mt. Rogers, 10,630 feet, by P. S. Abbot, G. T. Little, and C. S. Thompson.

1897. Mt. Pollux, 9250 feet, } by H. B. Dixon, A. Michael,
" The Dome, 9100 feet, } J. R. Vanderlip, C. L. Noyes, C. E. Fay, and P. Sarbach.

1899. Mt. Dawson, 10,800 feet, by H. C. Parker, C. E. Fay, Chr. Häsler, and E. Feuz.

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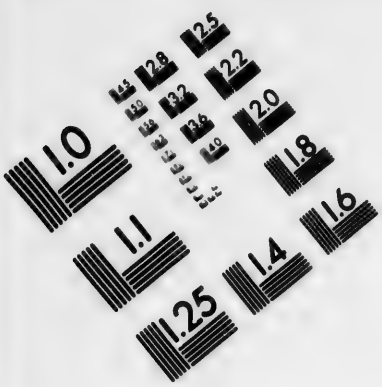
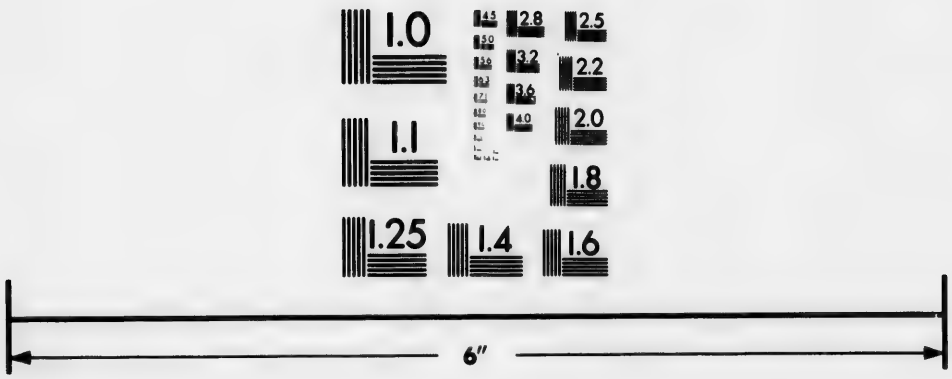
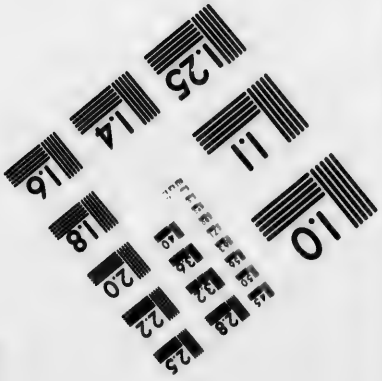


IMAGE EVALUATION TEST TARGET (MT-3)





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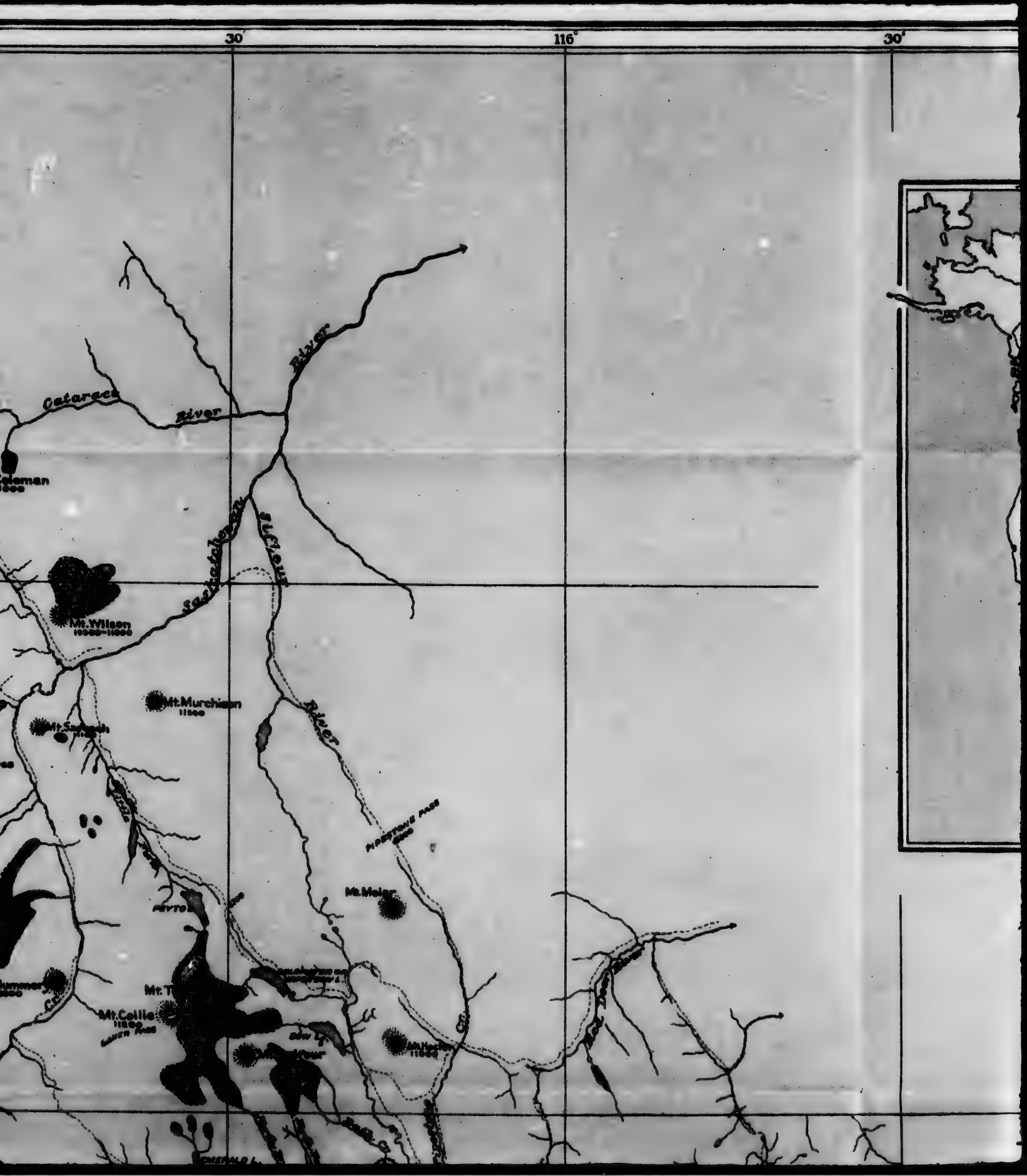
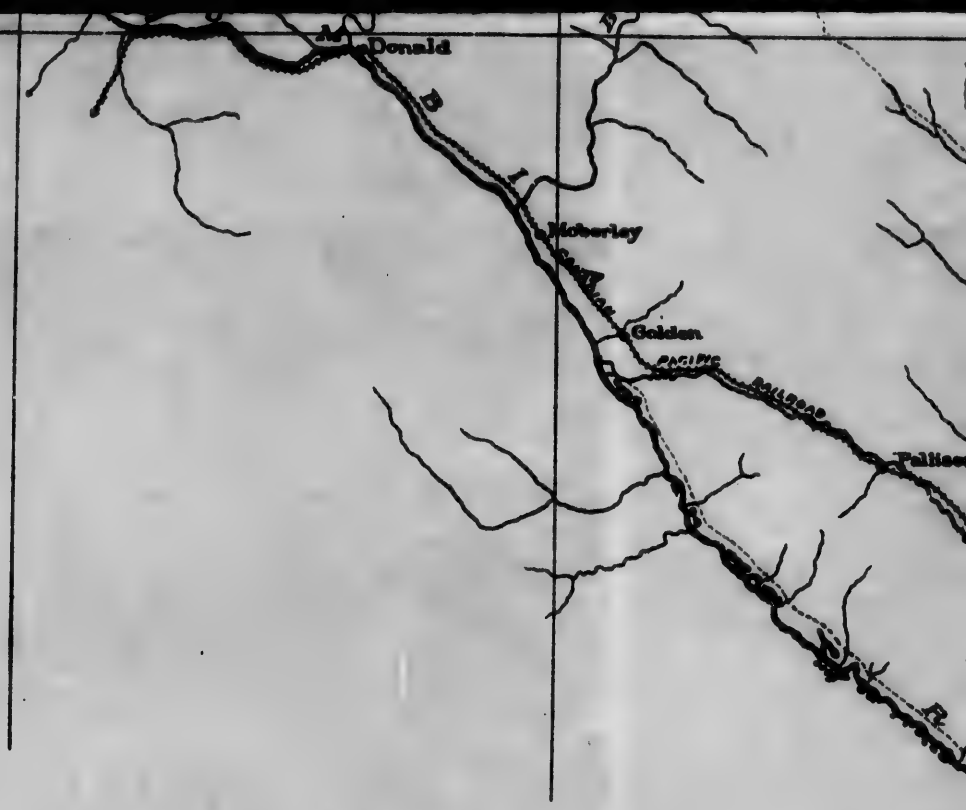
23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

118°
30'
117°
30'
52°
30'
Athabasca River
Whirlpool River
Brazeau R.
Cataract
Mt. Columbia
14000
Mt. Coleman
11000
Mt. Wilson
10500-11000
Mt. Lyell
Sullivan Pk.
Mt. Forbes
14000
Mt. Fryatfield
11000
Mt. Hummer
11000
Blue Water Cr.
Blueberry
Mt. McDonald
Bush River


30'
116°
30'
Cataract
River
Coleman
Mt. Wilson
10500–11000
Mt. Murchison
11500
Mt. Meiser
Mt. Collie
11000
River



MAP OF THE

ROCKY MOUNTAINS

BETWEEN LATITUDES 50°30' & 52°30'

Showing the rivers and indian trails so far as known

Scale

5 0 5 10 15 MILES

SOURCES OF INFORMATION

Dawson's Reconnaissance map, Map by G.P. Baker and J. Norman Collie. Map compiled by O.L. Noyes from work of H.O. Parker and C.S. Thompson. Maps of the Canadian Topographic Survey, and sketches of the sources of the Vermilion and Spray Rivers and vicinity of Mt. Assiniboine by Walter D. Wilcox.

LEGEND

Glaciers.

Lakes.

Indian trails.

Waterfalls.

Compiled and drawn by D.W. Cronin, Wash. D.C.

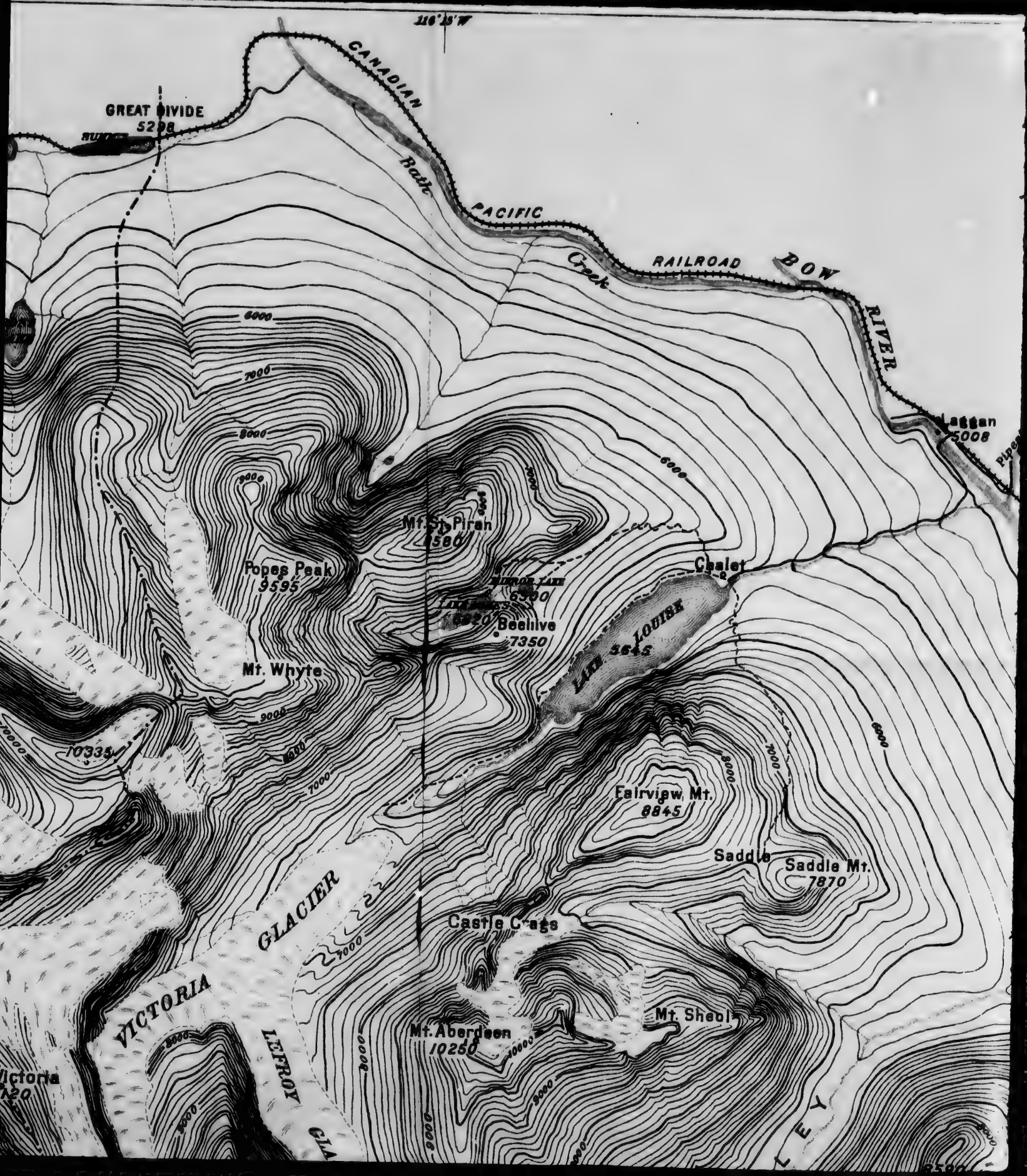
30'

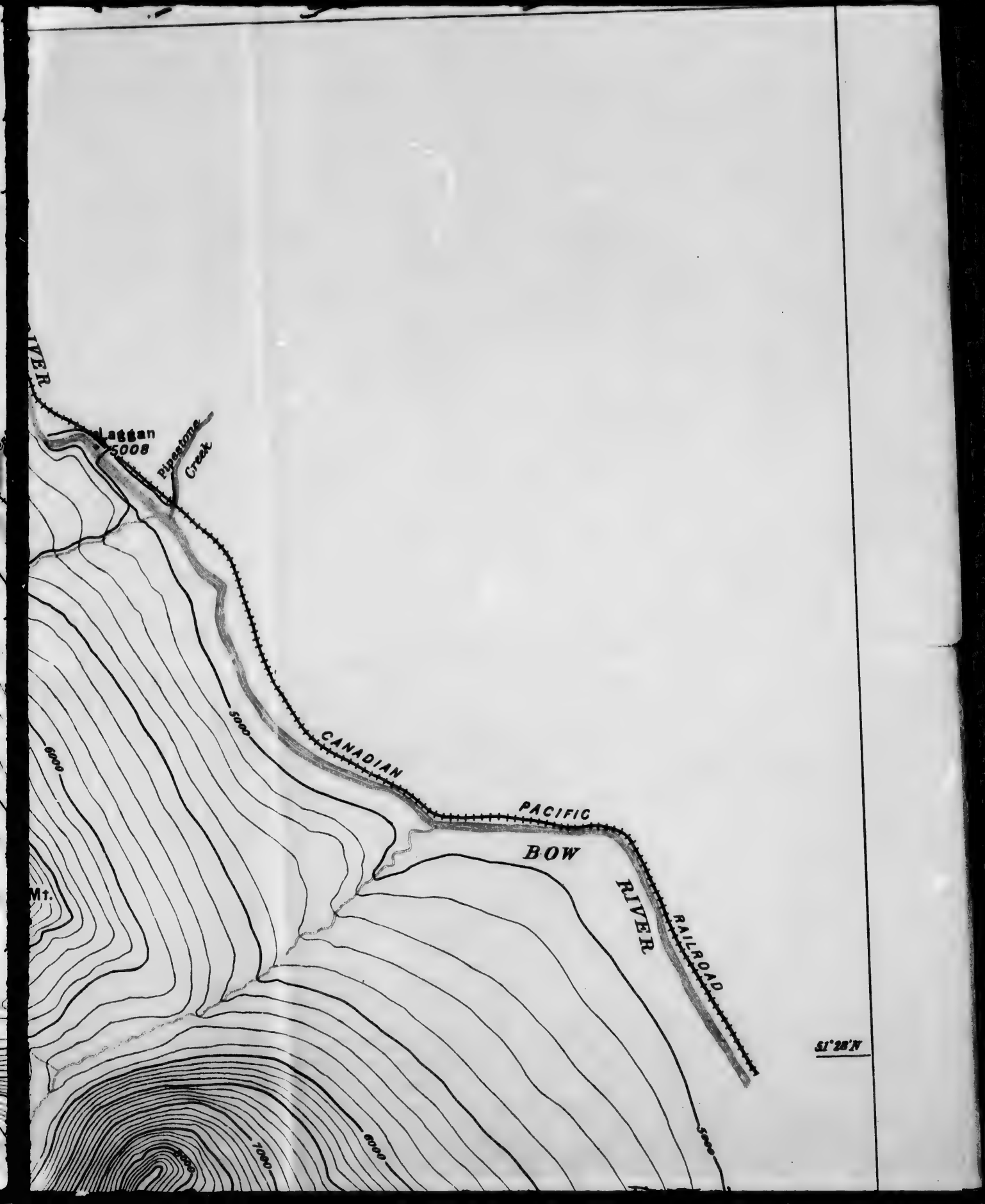
118° 117°

EMERALD L.
Mt. Stephen
L. LOUISE
Mt. Michael
Mt. Temple
Mt. Deltaform
Otter Tail
Mt. Vaux
Mt. Goodsir
Leanchoil
Cascade Mt.
Ball Mt.
Mt. Rundle
Vermilion River
Kootenay River
Cross
30'
116°
30'

30'
Ghost River
Mt. Rundle
9706
Canmore
Three Sisters
9850
Wind Mt.
9660
Bow River
TROUT L.
Cougar Cr.
Kananaskis River
KANANASKIS LAKE
51°
30'
115°
30'

GREAT
52
Hector
5174
6000
7000
8000
10000
10335
9000
10000
11000
Mt. Victoria
11220


116° 15' W
CANADIAN
GREAT DIVIDE
5298
Bath
PACIFIC
Creek
RAILROAD
BOW
RIVER
Laggan
5008
6000
7000
8000
9000
Mt. St. Piran
Popes Peak
9595
MIRROR LAKE
6500
Beehive
7350
Chalet
LAKE LOUISE
5645
Mt. Whyte
10335
Fairview Mt.
8845
Saddle
Saddle Mt.
7870
Castle Crags
GLACIER
VICTORIA
LEFROY
Mt. Aberdeen
10250
Mt. Sheol
10000


IVER
Lagoon
5008
Pipestone
Creek
5000
6000
CANADIAN
PACIFIC
BOW
RIVER
RAILROAD
Mt.
7000
8000
5000
51°28'N

MAP

OF THE LAKE LOUISE REGION SHOWING PART

THE SUMMIT RANGE OF THE CANADIAN ROCKY M

SURVEYED AND DRAWN BY
WALTER D. WILCOX.

SCALE 1 AND 1-2 INCH = 1 MILE.

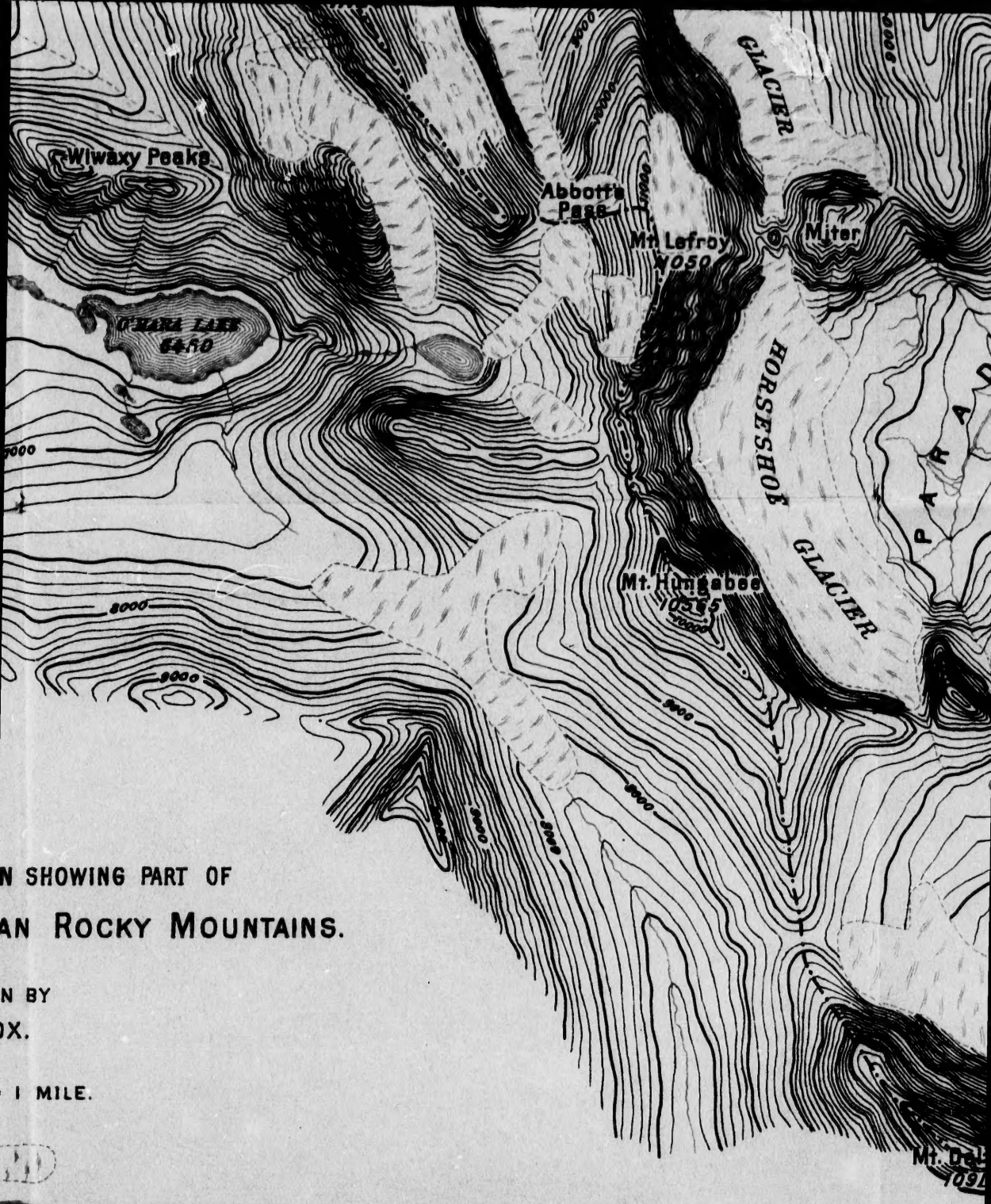
GLACIERS

LAKES

TRAILS

CONTINENTAL WATERSHED

ANDREW B GRAHAM PHOTO-LITHO WASHINGTON, D.C.



N SHOWING PART OF

AN ROCKY MOUNTAINS.

N BY

OX.

I MILE.

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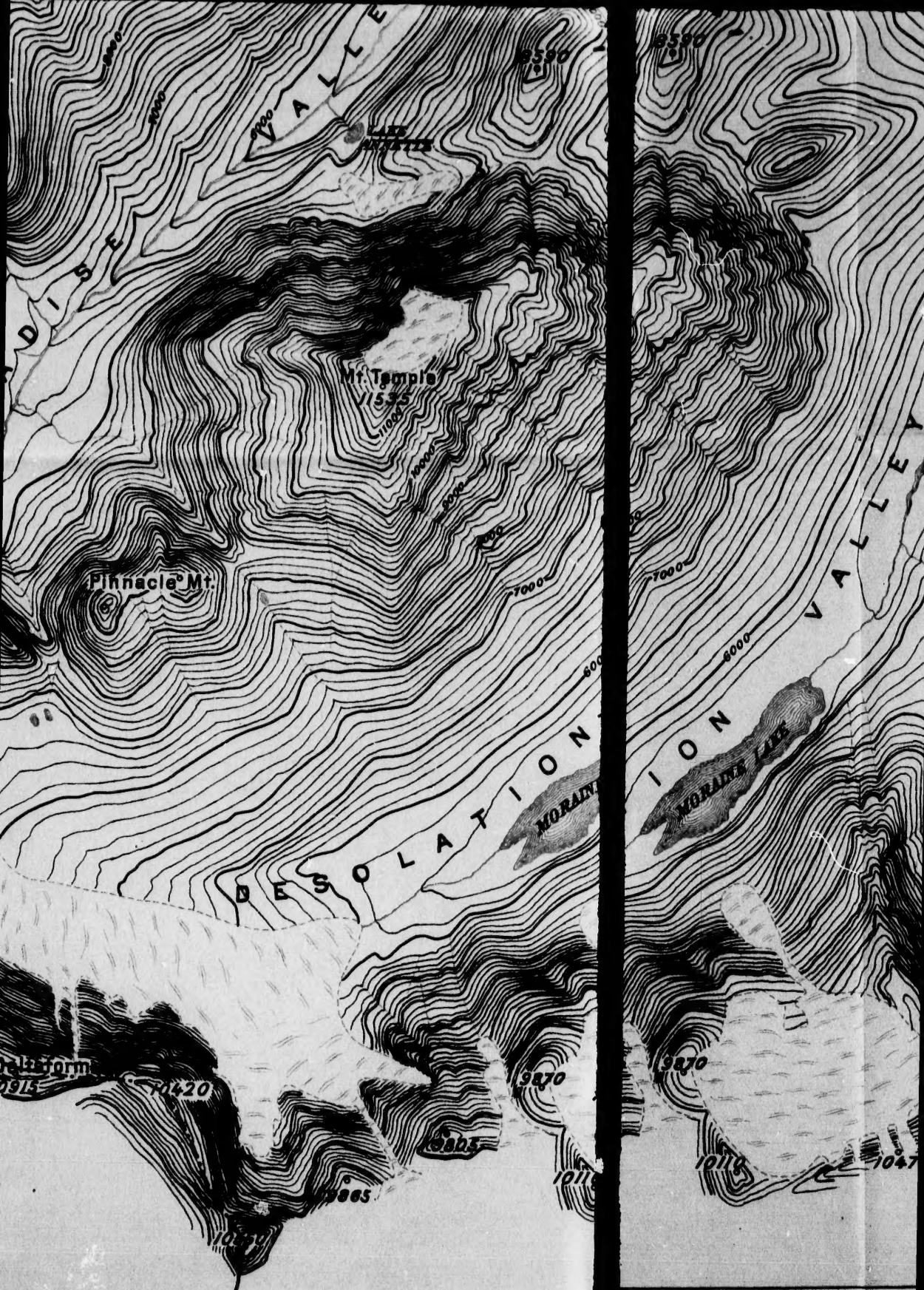
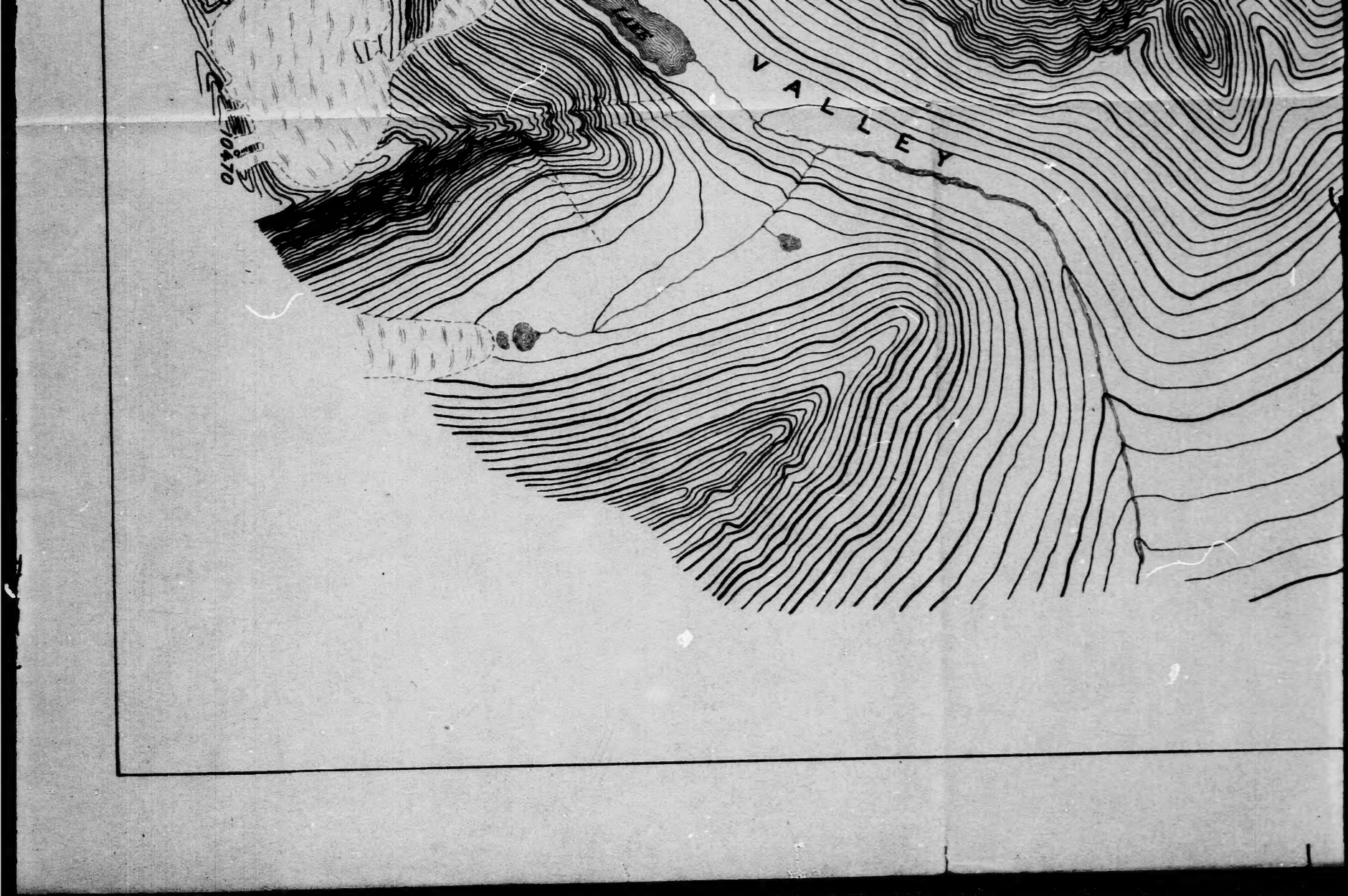

VALLEY
8590
LAKE
Mt. Temple
11535
11000
10000
9000
8000
7000
6000
Pinnacle Mt.
DESOLATION
VALLEY
MORAINE LAKE
9870
10420
10915
10110
10470


LAKE
VALLEY
1070